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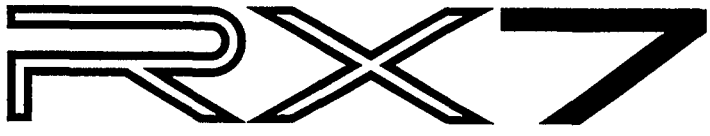


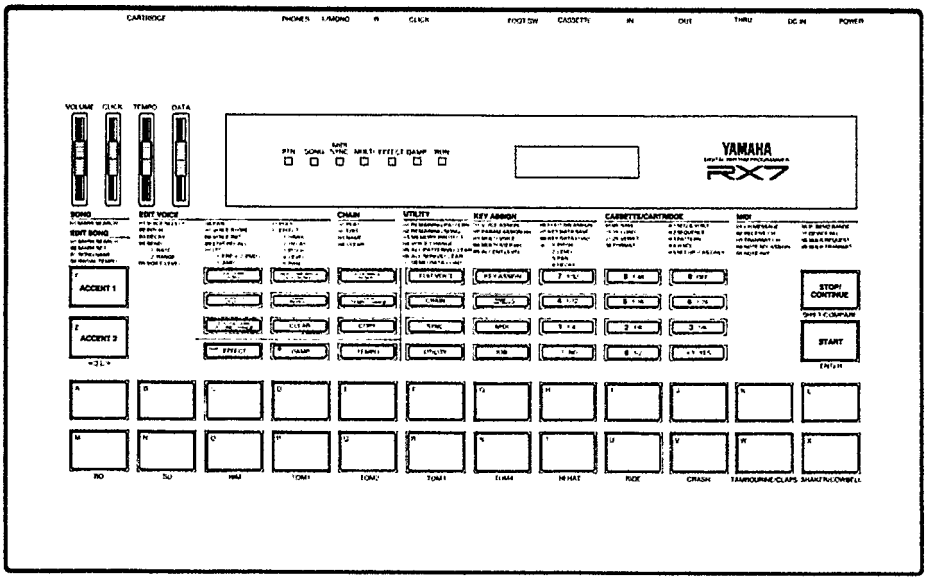
DIGITAL RHYTHM PROGRAMMER

YAMAHA

RX7

DIGITAL RHYTHM PROGRAMMER

OWNER'S MANUAL



INTRODUCTION

Congratulations on your purchase of the Yamaha RX7 Digital Rhythm Programmer!

You now own one of the most sophisticated musical accompaniment systems available - for that is what the RX7 really is. Much more than a mere drum machine, this microcomputer-controlled marvel lets you create complex and convincing accompaniment arrangements consisting not only of percussion sounds, but superbly realistic bass, guitar, brass and even "rap screams" as well. One hundred (!) digitally recorded voices are yours for the choosing. We wish you years of enjoyment with your new RX7, the ultimate rhythm (+ bass + backing + melody) programmer.

About this Manual

Despite its large variety of features, the RX7 is very easy to use. Reading this manual thoroughly while actually operating the RX7 will enable you to take full advantage of its many functions in no time.

Unfold the convenient back cover fold-out page. Its illustrations will help you quickly locate the controls and connection terminals.

After you know about which **PRECAUTIONS** to take, **GETTING ACQUAINTED** will introduce you to some of the fantastic sounds available on the RX7 and show you how to program a simple rhythm right away.

BASIC CONCEPTS AND FEATURES then gives you all the information you need in order to understand the functional structure of the RX7, so you can use it most effectively - and some hints on how to approach programming. This section will also help you make the most of the detailed explanations of each and every function that follow.

PRECAUTIONS

Your new RX7 is a fine musical instrument - and should be treated as such. Though it is ruggedly constructed and offers the reliability of solid-state circuitry, handle it with care and common sense. Keep the following points in mind, and your RX7 will give you years of reliable service.

- **Location**

Avoid exposure to direct sunlight or other sources of heat. Vibration, excessive dust, cold, low or high humidity can also cause malfunction.

- **Relocation**

When moving the RX7, unplug the AC adapter and all other connecting cables to prevent damage to cords and jacks.

- **Handling**

Avoid rough handling. Don't drop the RX7 as this can damage the internal circuitry. Applying excessive force to terminals or controls may lead to malfunctions. Always remove plugs from jacks or other terminals by gripping them directly, not by pulling the cord.

- **AC Power Connection**

Connect only to a power supply conforming to the specifications shown on the AC adapter.

Disconnect the RX7 from the AC outlet when not using it for an extended period of time. Electrical storms (lightning) can give rise to power surges, damaging digital circuitry even if power is turned off.

- **Cleaning**

Clean the exterior with a soft, dry cloth. Using chemical solvents will damage the finish.

- **Interference Through Electromagnetic Fields**

Do not use your RX7 close to television sets, radio receivers or other equipment generating electromagnetic fields. This could cause both malfunctions of the RX7 digital circuitry as well as interference noise in the other appliance.

- **Service and Modifications**

The RX7 contains no user serviceable parts. Opening it or tampering with it in any way can lead to electrical shock as well as damage and will void the product warranty. Refer all servicing to qualified YAMAHA personnel.

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GETTING ACQUAINTED WITH THE RX7

Several demonstration songs are factory-programmed to give you an impression of the amazing accompaniment possibilities now at your disposal. But first you have to make a few simple connections.

BASIC CONNECTIONS

NOTE: Connections should be made with the power of all equipment turned off.

■ *POWER*

Connect the supplied Yamaha PA-1210 Power Supply Unit to the DC 12 V IN terminal ② on the rear panel, but do not turn power on yet.

■ *AUDIO*

• Stereo Sound System

Since the RX7 allows you to adjust the stereo position of each instrument and offers various pan effects, we strongly recommend using a stereo amplification setup to obtain the best possible sound. Connect the RX7 OUTPUT jacks ⑨ and ⑩ to your mixer, amplifier etc., taking care that the left (L) and right (R) channels are plugged in correctly.

• Mono Sound System

If you only have a mono amplification system available, be sure to connect it to the RX7 L/MONO OUTPUT ⑩.

• Headphones

Stereo headphones can be connected to the rear panel PHONES jack ⑪.

POWER UP

When all connections have been made correctly, turn on the RX7 by pushing the rear panel POWER button ①, then power up your sound system.

NOTE: A brief output pulse appears at the RX7 outputs when power is turned on. To avoid possible damage to your speakers, always power up your sound system AFTER the RX7.

As soon as the RX7 is turned on, the following message appears on the LCD (Liquid Crystal Display) ⑫ for a few moments:

```
* DIGITAL RHYTHM *
* PROGRAMMER RX7 *
```

It is soon replaced by

Flashing cursor

```
Select PTN 00
04 / 4 :bar01
```

VOLUME

You are now ready to hear an RX7 demonstration performance - but be sure to adjust the volume first. While tapping any of the instrument keys ⑮, slide the master VOLUME fader ① up or down until you get an acceptable listening level.

DEMONSTRATION PERFORMANCES

Press the PATTERN/SONG key (on the upper left in the PATTERN/SONG key group ⑰. The display will change to

```
SONG 00 meas0039
>GET FUNK<:♩=126
```

informing you that the Song No. 00, "Get Funky" is now ready to be played. Press the START key ⑭, sit back, and listen!

To get an idea of how versatile the RX7 is, next call up demonstration Song No. 01, "TROPICAL", which has a totally different atmosphere. Press 0 in the numeric key pad ⑳, then 1, and START the RX7 as before.

BASIC RHYTHM PROGRAMMING

Impressed? Amazing though such complex accompaniment arrangements may be, programming them is not as complicated as you might think. Just to show you how easy the basics are, the following instructions will help you program a simple 16-beat Pattern often heard in disco and heavy rock music.

■ *CLICK (METRONOME)*

Programming in "real time" is similar to recording each instrument live on a multi-track tape recorder -you can actually hear the Pattern being built up in layers as you play the individual instruments. To help you stay in time, the RX7 outputs a precise metronome sound from the CLICK jack ⑧, which you should connect to an input of your mixer. This click guide can also be heard in the headphones.

■ *RECORDING*

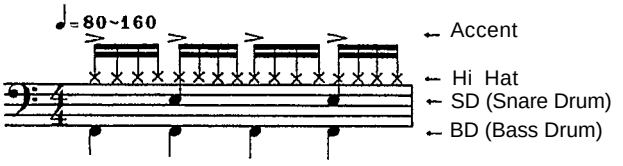
Since the RX7 is still set to SONG mode, shown by the SONG indicator ⑥ being lit, switch it to Pattern Mode to enable recording. Simply press the PATTERN/SONG key mentioned above twice, and confirm that the PTN (Pattern Mode) indicator ⑤ is lit. (If it is not, press the same key again.)

Next, tap the REAL TIME WRITE/EDIT SONG key next to PATTERN/SONG. The following display appears,

```
Real Write PTN00
04 / 4 :bar01
```

showing you that Real (Time) Write (recording) of Pattern No. 00 is now possible.

In musical notation, the rhythm Pattern you are going to input looks like this:



Press START and listen to the metronome click, whose volume you can adjust with the CLICK fader②. Reduce the speed with the TEMPO slider③ until it is slow enough for you to follow easily, then listen to it for a while until you get a feel for the beat.

When you're ready, input the bass drum sound first by tapping the BD instrument key (marked M) in time with the metronome beat, one tap for each click. Stop after four beats and notice how you can now hear the BD sound in time (we hope!) with the metronome click.

Now for the snare drum. This time, tap the SD key (marked N) only every second beat (click), paying attention to the beginning of the Pattern (bar), which is indicated by the high metronome sound. Let the Pattern repeat a few times until you feel the tempo again, and input the first SD sound on a beginning (high) click, the other one on the third beat.

Next, the fast hi-hat part. This would normally be the most difficult, except that the RX7 Quantize feature (explained later) makes sure that it is actually the easiest to record. For now, remember that the default Quantize setting is 1/16. This means that up to 16 notes can be recorded per measure for each voice. Therefore, you can't make a mistake with the hi-hat part (which consists of 16 sixteenth notes) even if you try. To prove this, tap the HI HAT key (marked T) as fast as you can, totally out of time, then listen. The result will always be hi-hat sounds with ultra-precise timing!

As a finishing touch, add the hi-hat accents. To do so, keep ACCENT 2 ⑯ depressed while tapping HI HAT in the same rhythm as you first did the BD, i.e. on every metronome beat.

This completes programming of a popular, basic 16-beat rhythm Pattern. Press STOP/CONTINUE to exit from the Real Time Write mode, then listen to your new Pattern without the metronome click by pressing START. Basically, that's all there is to creating your own rhythms with the RX7!

NOTE: Since this was the very first time you tried programming the RX7, you may have made a few mistakes. Due to the default quantize setting your bass drum may be out of time, or the snare in a wrong position - but don't worry. The RX7 offers you a whole host of possibilities for correcting such mistakes, one example of which you already noticed when writing the hi-hat part. Even if you are not at all sure of your sense of rhythm, the RX7 will help you program sophisticated patterns.

BASIC CONCEPTS AND FEATURES

The RX7 has so many features, it may seem a bit intimidating at first. On the other hand, when you hear the demonstration programs, you will no doubt want to learn how to create complex accompaniment arrangements like that for your own music.

As with any instrument, a certain amount of practice (and theoretical knowledge) is necessary to enable freedom of expression. However, once you understand the basic ideas, you will find it very easy to write sophisticated and highly realistic rhythm arrangements with the RX7.

This section first introduces the major features, functions and possibilities of the RX7. The final chapter, AN EFFECTIVE APPROACH TO WRITING, then tells you how to make use of them while referring to the appropriate sections in this Manual.

VOICES AND SEQUENCES

The most basic distinction to make is between functions relating to "voices" (= the instrument sounds themselves) and those dealing with "sequences" (= rhythmical combinations of notes).

The RX7 was conceived not only as a rhythm programmer, but also as an advanced MIDI sound source which can be played/programmed via MIDI keyboards and/or sequencers as well as with its own keys. As such, it offers you much more sound control over a far greater variety of instruments than any conventional drum machine, letting you add realism and excitement.

At the same time. the RX7 gives you complete freedom in combining these voices to form sequences. Even the finest nuances of each single note in a rhythm pattern can be individually adjusted.

■ *VOICES*

In the tradition of Yamaha's DX7 synthesizers, the 100 individual RX7 sounds are referred to as "voices" (used synonymously with "instruments" in this manual). Each voice has a number for easy access.

VOICE LIST

Voice No.	Type	Voice No.	Type
00 - 08	Bass Drums	71 -72	Timbales
09 - 18	Snare Drums	73 - 74	Agogos
19-20	Rim Shots	75	Cuica
21-37	Toms	76	Castanet
38 - 40	FM Percussion	77	Whistle
41-44	Hi hats (open/closed)	78	Claves
45 - 48	Cymbals	79	Bell Tree
49 - 52	Basses	80	Vibra Slap
53 - 56	Guitars*	81	Steel Drum
57 - 59	DX7 Voices	82	Glass Crash
60	Brass	83	Gunshot
61	Hand Claps	84	Door Slam
62	Timpani	85	Camera Shutter
63	Cowbell	86	Punch
64	Tambourine	87	Car Door Shutting
65	Shaker	88 - 93	Human voices
66 - 68	Congas	94 - 99	Reversed sounds
69 - 70	Bongos		

The following abbreviations are used for voice names on the LCD:

BD = Bass Drum, E. = Electric, F. = Fusion, H = High, H. = Heavy, HH = Hi hat, HO = High Open, HM = High Mute, J. = Jazz, L = Low, P. = Processed, prc = percussion, Rvs = Reverse, SD = Snare Drum

Ex.: H. BD 1 = Heavy Bass Drum

*: D.GtrS = Distorted Guitar Single Note
D.Gtr5 = Distorted Guitar Open Fifths
GtrCutD = Guitar Cut/Downstroke
GtrCutU = Guitar Cut/Upstroke

You have total control over the level (volume), pitch, pan (stereo position) and decay (length) of each voice, as well as over effects including delay, detune, distortion, pitch bend, vibrato, panned stereo echoes, etc..

Any voice can be assigned to and played by any Instrument key on the RX7. You can create your own key layouts ("drum sets") and have the RX7 memorize up to five of them.

Initially, the following voices are assigned to the Instrument keys 15:

(Four other preset layouts are available.)

INITIAL INSTRUMENT KEY VOICE LAYOUT

BASS DRUM 2	SNARE DRUM 2	RIMSHOT 2	ELECTRIC TOM 1	ELECTRIC TOM 2	ELECTRIC TOM 3	ELECTRIC TOM 4	HI HAT (OPEN)	RIDE (EDGE)	CHINESE CYMBAL	TAMBOURINE	SHAKER
A	B	C	D	E	F	G	H	I	J	K	L
M	N	O	P	Q	R	S	T	U	V	W	X
BASS DRUM 1	SNARE DRUM 1	RIMSHOT 1	TOM 1	TOM 2	TOM 3	TOM 4	HI HAT (CLOSED)	RIDE (CUP)	CRASH	CLAPS	COWBELL

NOTE: Pressing the DAMP Key ⑲ to switch on the DAMP LED ⑩ mutes the Instrument keys in any mode.

■ *SEQUENCES - PATTERNS, SONGS AND CHAINS*

A Pattern is a rhythmic combination of instrument (voice) sounds. It forms the basic unit of Songs, which are complete accompaniment arrangements. (A variety of popular drum patterns are permanently stored in the internal ROM. See UTILITY Job #07.)

A Pattern consists of one or more bars (measures), and can be input (programmed) either in real time, i.e. live, or step by step.

Songs are put together by determining the order in which Patterns are played by the RX7. Chains are simply further combinations of Songs.

Each time a voice is played in a Pattern, it can have a different pitch, level, decay, stereo placement, etc. This "Edit Voice" feature allows the creation of arrangements which are vibrantly alive.

Songs can be made more expressive by adding tempo and volume changes.

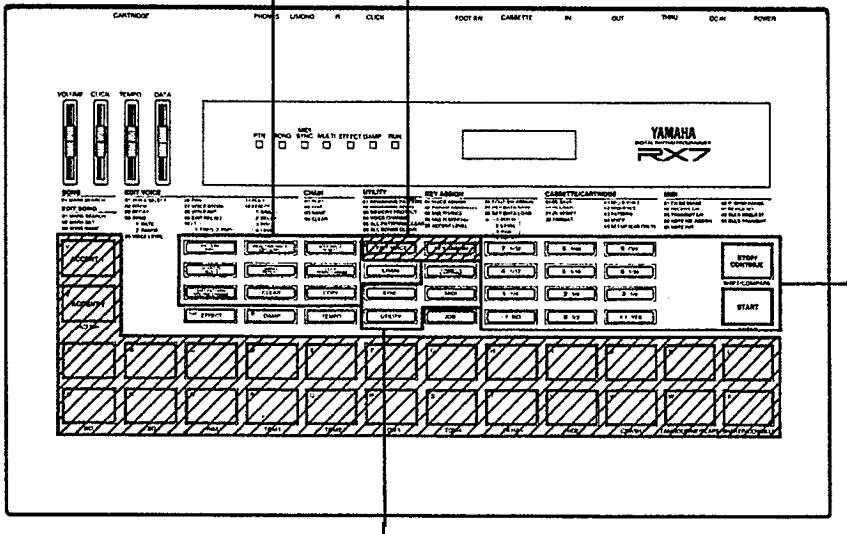
■ *CONTROLS - Functional Groups*

Take a look at the RX7 control panel illustrated below. It has been organized into four functional groups of keys concerning 1) instrument, 2) sequences, 3) utility functions and 4) data entry. Distinguishing between these four groups will facilitate operation.

Controls: Functional Groups

2) The **Sequence Group** controls functions that let you create and play accompaniment arrangements (Patterns, Songs, Chains).

1) The **Instrument Group** gives you individual control over all RX7 voices, allowing you to alter them or play them, from the RX7 panel or via a MIDI device, for performance and recording.



3) The **Utility Group** comprises controls for a variety of additional functions.

4) The **Data Entry Group** lets you check all RX7 settings and adjust (program) them according to your requirements.

To keep the front panel compact, most keys have been given more than one function, so the order in which they are pressed is important. Always watch the messages on the LCD display for guidance. In many cases, dialog-type programming is possible, with the LCD asking you questions you can answer by pressing YES, NO or numeric keys.

You can exit from a function mode by pressing a different function key (or in some cases, STOP/CONTINUE).

1) **Instrument Group**
   Consists of the assignable Instrument keys used for playing and programming, KEY ASSIGN which determines the voice layout, and EDIT VOICE with which you can adjust a large number of voice parameters according to your requirements.
   The MIDI key is used to access important functions when controlling RX7 voices from external MIDI equipment.

2) **Sequence Group**
   The nine keys grouped together on the upper left all have two distinct functions, depending on whether Pattern or Song mode is selected. Pattern functions are written on the top part of the key, Song functions on the lower one.

3) **Utility Group**
   UTILITY functions let you check remaining Pattern and Song memory space, clear all Patterns or Songs, turn Memory protection on and off, and exchange voices in existing Patterns. Saving data to (or loading it from) RAM cartridges and tape cassettes and controlling MIDI communication with external equipment is accomplished with the other three keys in this group.

* Except for SYNC and JOB itself, all keys in the group numbered ㉑ on the fold-out illustration of the control panel access functions in conjunction with the JOB key (as do SONG and EDIT SONG for certain operations). All Jobs and their numbers are listed on the control panel Job Menu ㉔ for easy reference.

4) **Data Entry Group**
   Actual programming, i.e. parameter selection and value input, is performed mainly with these keys and the DATA entry slider ④. Values that can currently be input are indicated by a flashing cursor.
   The - l/NO and + l/YES keys answer questions and shift to lower/higher values. Keeping them depressed usually speeds up this shift.
   In general, the numeric keys select Job numbers or parameters and input values. Also note the fractions printed on them. These refer to musical time.
   ACCENT 2 moves the cursor between multiple parameters during data entry displays. Certain inputs are finalized by pressing ENTER.
   Depending on the current function, SHIFT/COMPARE lets you compare altered data with the previous setting or input lower case letters for Song and Mark names.

■ *WRITING ON THE RX7*

Three distinct ways of writing (= programming, recording) Patterns are possible on the RX7: 1) in real time with the Instrument keys, 2) in real time using a MIDI keyboard, and 3) step by step with the Instrument keys. All three programming methods have their advantages for different applications, and you will soon discover your personal preferences.

• Real Time Write vs. Step Write

In general, the Real Time Write mode is ideal for creating Patterns according to hearing and rhythmic feeling, for you can listen the Pattern being built up layer by layer as you add the notes of different instruments.

On the other hand, Step Write mode is suitable for users with less confidence in their sense of rhythm, when inputting data from Pattern books or for difficult (fast, complex, off-beat) sections.

Of course, you can use both modes in combination, for instance creating the basic rhythm with Real Time Write and adding finishing touches with Step Write.

• Instrument Keys vs. MIDI Keyboard

During Real Time Write, you also have the choice of writing with the RX7 Instrument keys or a connected MIDI keyboard. Particularly for bass lines, melodic sequences (toms, bongos, guitar, brass) or passages calling for the expressive use of different volumes (dynamics), playing voices from a velocity-sensitive MIDI keyboard can make writing much faster and easier.

Basic rhythm programming is usually simpler with a suitable Instrument key layout. Dynamics, for instance, can be added later with Edit Pattern.

■ *EDITING*

With the RX7, it is very easy to correct or alter Patterns in almost any conceivable way AFTER they have been written. Such operations are referred to as “editing”. Possibilities include:

a) Overdubbing - addition of new notes/instruments to an existing Pattern.

b) Clear - deletion of single notes or entire voices from a Pattern.

c) Voice Change - exchanging of any voice with another in existing Patterns.

d) Edit Voice - overall alteration of voice parameters (pitch, pan, level, etc.) and effects.

e) Edit Pattern - alteration of voice parameters for individual notes in a Pattern.

■ *AN EFFECTIVE APPROACH TO PROGRAMMING*

How to Use This Manual

The following sections of this Manual provide a detailed, systematic guide to all RX7 operations. You can locate the desired function by first having a look at the CONTENTS, then reading the relevant OVERVIEW (at the beginning of each section) and finally the FUNCTION explanation.

To help you get started, a possible approach to programming is shown here together with references to the necessary operations. It is also a good idea to study the demonstration Songs, using the EDIT PATTERN function, to see how these professional arrangements are structured.

• Create Your Own Drum Set

The first thing to decide on is which of the 100 voices you want to use for your accompaniment arrangement.

You can listen to various voices using KEY ASSIGN Job #01, hitting any desired Instrument key while selecting voices with Data Entry Group keys or the DATA slider. In the process, you can create your own drum set with the most suitable layout.

If you want to record bass lines, chords or other patterns necessitating several pitches/versions of the same instrument, use KEY ASSIGN Job #03 to assign a single voice to the upper row of Instrument keys (A ~ L). Then access Job #04 (plus, if necessary, Job #02) to alter the pitch/level/pan/etc. settings of each upper row key, thus obtaining an extra "keyboard" dedicated to a single voice.

You can save all such key assignment data with KEY ASSIGN Job #07.

If you have a MIDI synthesizer etc. at your disposal, you may prefer to play single voices from a keyboard, assigning them with MIDI Job #02.

Even if you should decide after writing that you want to use different instruments after all, UTILITY Job #04 lets you exchange voices in completed Patterns.

• Write Patterns and Songs

With your new "drum set", you can start recording your first Patterns in real time or step by step. In many cases, you will want to combine several, often very similar, versions of the same basic Pattern for a Song. Instead of programming each one separately, it saves a lot of time to COPY the basic Pattern and then add new instruments/notes, use CLEAR to delete unnecessary notes or voices, exchange instruments with UTILITY job #04, and so on.

After you have written some Patterns, you can begin combining them to form a Song with EDIT SONG. With INSERT and DELETE, you can add or erase Patterns any time, making it is very easy to correct the Song configuration as you go along. REPEAT saves entering the same Patterns over and over again.

Songs become much more expressive with TEMPO CHANGEs (accelerando/ritardando) and VOLUME CHANGEs (crescendo/ decrescendo), which are best input when the Song is more or less complete.

• Add Finishing Touches: Editing

Once you have written a Song (or some Patterns), you can often enhance the musical impression by changing the overall setting of one instrument or the other with EDIT VOICE, for instance raising/lowering levels or adding exciting special effects.

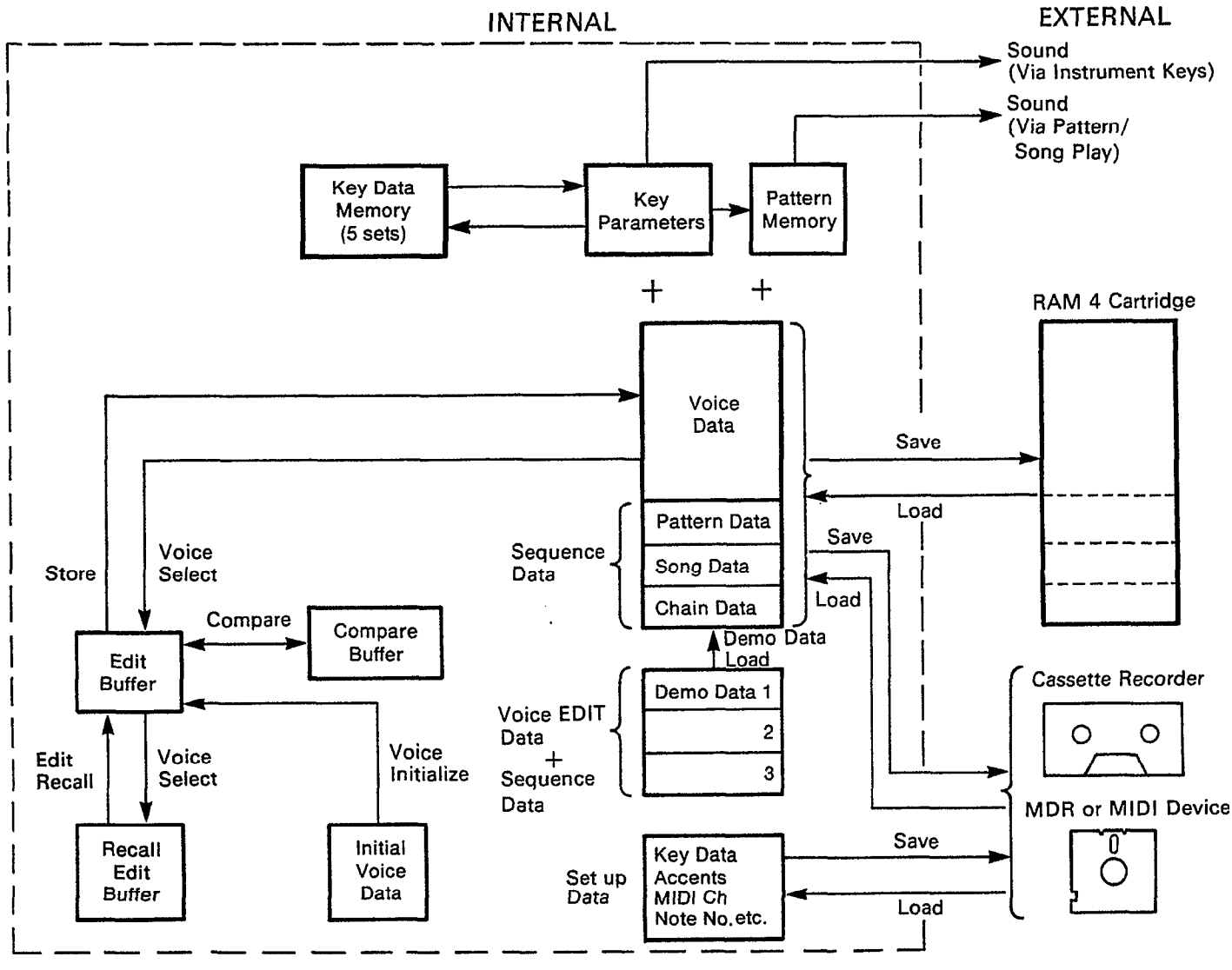
For alterations of single notes within the musical context of a Pattern, use EDIT PATTERN. This allows you to, for example, lengthen the decay of a voice or to create stereo movement, giving you limitless expressive possibilities.

Intelligent use of these two functions will let you achieve perfectly balanced arrangements (and many effects) that were previously possible only through professional-quality mixing of multiple instrument outputs.

• Save Your Sequences

When you satisfied with your Patterns/Songs (or when you want to postpone editing to the next session), you can save both sequence and/or voice data either to an optional RAM4 CARTRIDGE, a CASSETTE tape, or to MIDI devices which provide bulk data storage via disk, such as the Yamaha MIDI Data Filer MDF1 or a DX7 II FD synthesizer (using MIDI Job #09).

SOUND DATA AND MEMORY CONFIGURATION



OVERVIEW

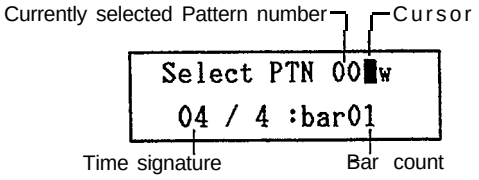
In the Pattern mode, you can

* Select any Pattern and play it (or a specified succession of Patterns) at the desired tempo.
* Record (write) up to 100 Patterns and store them in the RX7's internal memory.
* Erase (clear) a Pattern, or a single voice within a Pattern.
* Copy or append Patterns.
* Edit Patterns by adjusting the pitch, level, pan, decay and effect on/off settings for each note.
* Check which voices/parameters were used in any Pattern.
  When power is turned on, the RX7 is automatically set for Pattern Selection, i.e. it is in Pattern Mode.

* To use Pattern functions, always enter Pattern Mode first.
The PATTERN/SONG key switches the RX7 between Pattern and Song Mode, indicated by the LEDs PTN ⑤ and SONG ⑥.
To enter Pattern Mode from any other mode, press this key until the PTN LED lights.

PATTERN SELECTION

FUNCTION Selects a Pattern for playback, writing, overdubbing, clearing or editing.



The RX7 can store up to 100 Patterns in memory locations numbered 00 through 99. (The remaining Pattern memory space can be checked with UTILITY Job #01.) A "w" on the display next to the cursor indicates a Pattern location already containing data. Such Patterns can be played, overdubbed (additional notes recorded "on top" of them), copied or deleted (cleared).

Pattern locations without the w-mark are empty, i.e. they contain no data yet. Select such numbers when you want to create (write) a new Pattern.

OPERATION Patterns can be selected using the - 1/NO and + 1/YES keys or the numeric key pad.

1. - 1/NO and + 1/YES KEYS

Convenient for selecting Patterns adjacent or nearby to the one currently displayed, or to locate empty patterns.

- 1/NO selects the next lower, + 1/YES the next higher Pattern number. Holding down either key rapidly scrolls through the numbers in the respective direction.

2. NUMERIC KEYS

Convenient for selecting Patterns with far higher or lower numbers than the present one.

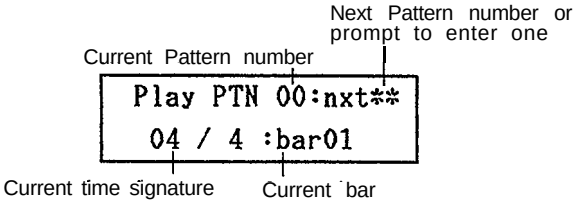
Enter the two-digit Pattern number directly with the numeric keys. Numbers below 10 must be preceded by a zero. For example, to select Pattern 2, enter "0" then "2".

PATTERN PLAYBACK

FUNCTION Continuous playback of selected Patterns until stopped.

OPERATION

1. After selecting the desired Pattern, press START ⑭ or STOP/CONTINUE ⑬. The RUN LED ⑪ will light, and the display will change to



2. The prompt mark "**" means you can specify the next Pattern to be played right after the present one, using either of the methods described under Pattern Selection. As long as the prompt is displayed, the current Pattern will be repeated.
3. To stop playback, press STOP/CONTINUE. The RUN LED will go out.
4. To restart playback from where it was stopped, press STOP/CONTINUE again. Pressing START instead recommences playback from the beginning of the Pattern.
5. After having stopped playback, you can revert to the Program Selection display directly by pressing - l/NO. + l/YES or a numeric key.

TEMPO

FUNCTION Sets the tempo (speed) of Pattern, Song or Chain playback or Pattern writing.

Tempo can be adjusted any time in the range from 40 to 250 quarter-notes per minute, either using the TEMPO slider③ or the TEMPO key⑳.

Pressing the TEMPO key for adjustment has the advantage of being able to visually confirm the current tempo on the display. However, in order to continue with any function in use before tempo adjustment, you must press that function's key. For example, if you were writing in Real Time, you have to press REAL TIME WRITE after adjustment with the TEMPO key to continue writing.

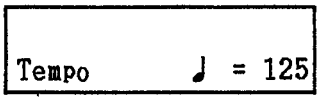
OPERATION Tempo can be adjusted with or without visual confirmation.

1. Adjustment by Ear

The TEMPO slider can be used any time to adjust the tempo without interfering with the current operation. Note that the tempo may "jump" when the slider is moved.

2. Visual Adjustment

To visually confirm the tempo setting on the LCD, press TEMPO. The lower line of the display will show the tempo in number of beats (quarter notes) per minute:



The upper LCD line still shows the current mode.

You can now alter the tempo with - l/NO or + l/YES, the numeric keys or the TEMPO slider. The display will change accordingly, showing the new tempo value.

CLICK

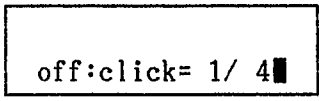
FUNCTION Provides a metronome click sound during Pattern writing or during Pattern and Song playback.

Click can be set to sound every 1/2, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24 or 1/32 note. The beginning of each bar is indicated by a Click sound with a higher pitch.

The Click rate can be adjusted, and the Click sound turned on and off, before or during any Pattern operation. To continue with that operation, press the respective key. Click is always on during Real Time Write.

OPERATION

1. Press CLICK/TEMPO CHANGE. The lower line of the display will show the current Click rate and whether the Click metronome is on or off.



2. To turn Click on or off for playback, press - 1/NO (OFF) or + 1/YES (ON).
3. Set the Click rate with the numeric key pad. (The Click rates are shown as fractions on the keys next to their usual numeric value.)
4. Click volume is adjusted with the CLICK fader②. It is independent of the VOLUME fader setting.

QUANTIZE

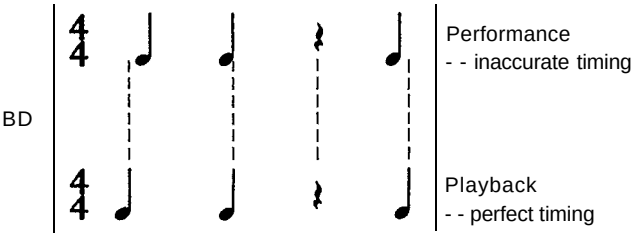
FUNCTION Real Time Write: Automatically corrects timing according to the selected quantize rate.
Step Write: Determines length of notes or rests being input.

From a technical point of view, Quantize has the same function for both the REAL TIME and the STEP WRITE modes, i.e. it determines the length of the shortest notes that can be input. A Quantize rate of 1/4 thus means that whole, 1/2 or 1/4 notes can be written, but not 1/8 or 1/16 notes, etc. Since the applications of the Quantize function differ somewhat depending on the Write mode, they are explained separately.

■ *REAL TIME WRITE*

As illustrated below, Quantize automatically corrects the timing of input notes by moving them to the nearest Quantize "beat". This can be set between 1/2 and OFF (= 1/96) and determines the shortest note you can write. (Remember how in GETTING ACQUAINTED, tapping the HI HAT key as fast as possible recorded precise 1/16 notes. This was because Quantize was set to 1/16.)

Example: Quantize set to 1/4



The smaller the Quantize rate (fraction), the shorter the notes that can be input, and the greater the possibility for intentional "humanizing" of the beat - or inaccuracies you hadn't intended. The most subtle nuances of timing can be captured by turning Quantize OFF. (Actually, even when this function is OFF, the RX7 is still quantizing to an extremely fine rate of 1/96.)

The ideal Quantize rate for Real Time Write will depend on your ability to keep precise time. If you are very confident of your sense of rhythm, you might want to keep Quantize OFF all the time. On the other hand, Quantize will allow greater precision if you are not such a sharp "drummer" yet.

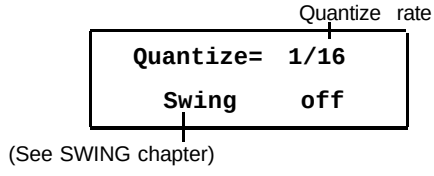
A concrete example for Real Time Write Quantize is given in the Real Time Write chapter below.

■ *STEP WRITE*

In the Step Write mode, Quantize determines the "step length", that is to say the length of notes or rests being input. Since Quantize settings are an integral part of the Step Write process, they are explained together with other Step Write operations.

OPERATION Quantize can be set/adjusted before or during Pattern writing.

1. Press QUANTIZE/DELETE to display



2. The Quantize rate is set with the numeric keys, similar to setting Click: The fractions on these keys indicate the respective Quantize rate, which covers the range from 1/2 to 1/48. Pressing numeric key 9/OFF turns Quantize off.
3. As with Tempo and Click, Quantize can be set at any time, and it is necessary to revert to a previous function after Quantize rate adjustment by pressing the corresponding key.

REAL TIME WRITE

FUNCTION Create, overdub or alter a Pattern by playing the voices live (in real time).

To create a new Pattern from scratch, you must first specify the time signature and length of the Pattern in bars.

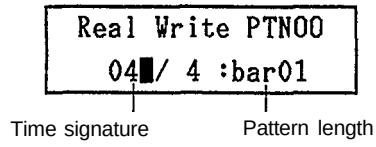
This is not possible with existing Patterns you want to overdub or change, since their time signature and length are already fixed. (However, you can append Patterns to each other using COPY, thus creating longer ones.)

* You can exit from Real Time Write mode any time by pressing STOP/CONTINUE.

OPERATION

■ *TIME SIGNATURE AND PATTERN LENGTH*

1. Making sure the PTN LED is lit and the Pattern location you wish to write to is selected, press REAL TIME WRITE. If the location is empty, the following display will appear:



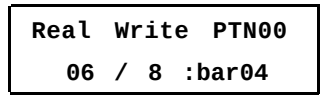
This shows the "default" setting: time signature = 4/4, pattern length = 1 bar. The cursor indicates that you can change these values as required.

NOTE: Should the LCD show the message "Memory Protected", you must first turn off the Memory Protect function with UTILITY JOB #03.

* If an existing Pattern was selected, the cursor will not appear, and you can start to write over (overdub) or alter the Pattern immediately by pressing START.

2. Should you not want to use the default setting of common time and one-bar length, set the time signature numerator by entering a two-digit number (ex: 3 --> 03) in the range from 01 to 99.
3. To set the denominator, move the cursor to the right using ACCENT 2 and enter a value with the numeric keys. The fractions from 1/2 to 1/32 printed on the keys are valid. (1/48 can NOT be used.)
4. Finally, input Pattern length by again moving the cursor to the right and entering a two-digit number in the range from 01 to 99.

Example: Time signature 6/8, Pattern length 4 bars



* These settings are not memorized until you actually record (write) sounds. You can therefore alter them, moving the cursor with ACCENT 2, until you have input the first note.

■ *WRITING A PATTERN*

• Writing with the Instrument Keys

Assuming that Quantize (see example further below), time signature and Pattern length have been set accordingly,

1. Press START.
   The RUN LED will light up, and you will hear the metronome Click guide. If the Pattern is longer than one bar, the LCD will indicate the current bar number as the RX7 cycles through the Pattern.
2. Adjust Tempo and Click if necessary. Once you get the feeling for the tempo and beat, you can begin writing any time (usually on the first beat of the first bar).

3. Input (write) the desired voices by tapping the Instrument keys with the correct timing. Notes/instruments can be added as the Pattern recycles, thus building up the Pattern in layers.

a) You can input one instrument at a time or several simultaneously.

* If you want to use voices currently not assigned to any instrument keys, use KEY ASSIGN JOB #0l prior to writing.

b) Adjust the Quantize rate depending on the instrument part if this makes precise writing easier.

c) To accent beats, hold down one of the green ACCENT keys while tapping an Instrument key.

d) Mistakes can be erased as you go along by holding the CLEAR key and tapping the respective Instrument key in time with the note you want to delete.

* The chapter below on PATTERN/VOICE CLEAR tells you how to erase whole instrument passages or Patterns.

e) As already shown in GETTING ACQUAINTED, accents can be overdubbed.

4. To stop recording, press STOP/CONTINUE.
The RUN LED will go out, Pattern Selection mode is entered and you can now play your Pattern by pressing START. To add or delete notes, stop playback and re-enter Real Time Write (or Step Write) mode.

• Writing with a MIDI Keyboard

Programming is basically the same, with the added advantages of being able to input

a) subtle dynamics (expressive volume changes) in real time (if the keyboard is velocity sensitive),

b) a larger variety of voices than is possible with a single Instrument key layout

c) melodic lines and chords more easily than with the RX7 Instrument keys.

First, you must use MIDI Jobs #02 and #04 to assign the RX7 voices to the connected MIDI keyboard as desired. Then all you have to do is play during Real Time Write.

* Both the RX7 Instrument keys and several MIDI keyboards can be used simultaneously for programming and playing.

■ *DAMP*

Using this key⑲ during Real Time Write can add particular realism by damping sustained sounds such as cymbals. This function is especially easy to operate from a MIDI keyboard.

When writing with the Instrument keys, DAMP can only be used AFTER a Pattern has been programmed. Select the respective Pattern, then enter Real Time Write mode and press DAMP. (The DAMP LED⑩ lights up.) You can now damp any recorded voice by pressing its Instrument key exactly when you want the sound to STOP.

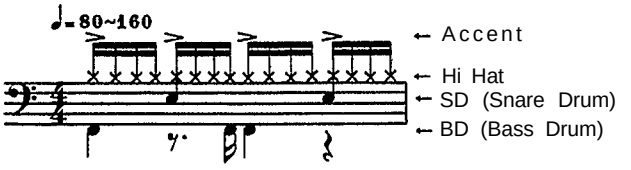
If you have a MIDI keyboard available, damping is possible DURING the initial Real Time programming of Patterns. Just press DAMP, causing the DAMP LED to light. Any sounds played on the MIDI keyboard will now sound only as long as the key is pressed. As soon as you release the key, the sound will be damped immediately.

* As long as the DAMP LED is lit, all RX7 Instrument keys are damped and cannot be used to play any voices.

* Since the damping point is always moved to the nearest Quantize division, the effect of the Damp function is influenced by the Quantize rate. (In some cases, there will be no damping effect at all.) Quantize is therefore best turned off when using the Damp function.

■ *QUANTIZE EXAMPLE*

Try programming the following popular rock pattern in Real Time Write with Quantize set to 1/16.



If the result is satisfactory, there is no need to use any other Quantize rate, but if you find writing too difficult, try the following method.

1. Set Quantize to 1/16 and input the closed hi-hat notes, ignoring the accents for the time being.
As in our first writing example in GETTING ACQUAINTED, there is NO WAY you can make a mistake (except by leaving out notes, which can be input the next time around).

2. When all hi-hat notes have been written, set Quantize to 1/4 and input the hi-hat accents on each Click beat (by holding down ACCENT 2 and tapping the HI HAT Instrument key). Again, there is NO WAY you can go wrong. Due to the 1/4 Quantize rate, the accents will be precisely in time, no matter when you tap the HI HAT key.

3. Leaving the Quantize rate as it is, tap the snare drum (SD) Instrument key on every second Click. This is the first time you can make a mistake. If you do and write too many SD notes, delete the unnecessary ones by holding down the CLEAR button while tapping SD.

4. Finally for the most difficult part - the bass drum (BD) line. Set the Quantize rate back to 1/16 and perhaps lower the tempo even further. If you don't trust your sense of rhythm (or can't imagine what the Pattern should sound like by looking at the notation), try counting the hi-hat notes to know when to tap the BD key (namely on the lst, 4th, 7th, 9th and 16th hi-hat notes).

5. If even this fails and you still can't write the BD line in Real Time, all is not lost - you can do it with Step Write.

STEPWRITE

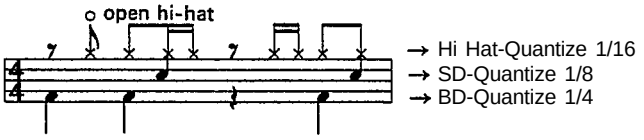
FUNCTION Create or alter a Pattern step by step.

In this mode, you can take your time entering one note after the other.

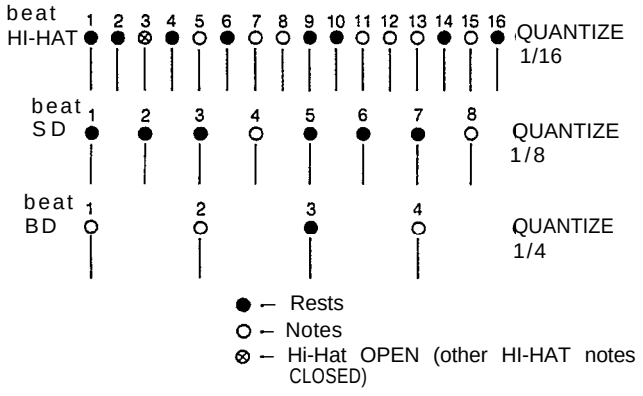
The length of each step or beat (= the length of input notes and rests) is adjusted by pressing QUANTIZE and then selecting the desired fraction (e.g. quarter note, eighth note) with the numeric keys. As shown by the example illustrated below, intelligent use of Quantize can substantially speed up Step Writing.

* To input notes longer than the current Quantize rate, you must combine a note with the necessary number of "blank" steps, input with + l/YES.
For instance, to input quarter notes when Quantize is 1/16, you must tap the desired Instrument key once and then press + l/YES three times (since 1/4 = 4 x 1/16).

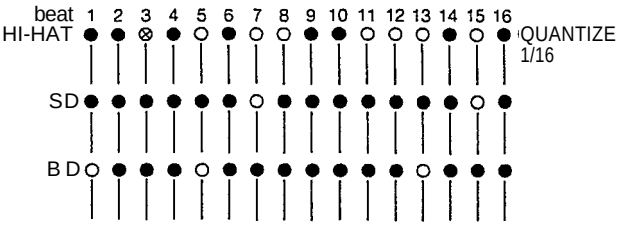
Ex.: Program the following Pattern with Step Write



Written in the form of a rhythm diagram, the Pattern looks like this. (The white dots indicate notes, entered by tapping an Instrument key, while black dots show rests or blank steps, entered by pressing + l/YES.)

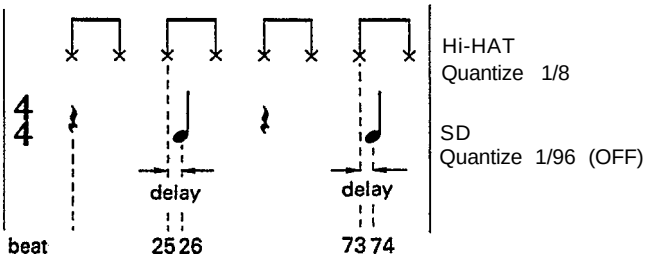

beat 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
HI-HAT
QUANTIZE 1/16
beat 1 2 3 4 5 6 7 8
SD
QUANTIZE 1/8
beat 1 2 3 4
BD
QUANTIZE 1/4
● – Rests
○ – Notes
⊗ – Hi-Hat OPEN (other HI-HAT notes CLOSED)

The most suitable Quantize rates for Step Write are indicated on the right of each instrument part. Just to show how selection of the appropriate Quantize rate saves time, look how many times you would have to press + l/YES to enter blank steps (rests) if you left Quantize at 1/16 for input of the snare drum (SD) and bass drum (BD) as well.



On the other hand, setting a high Quantize rate allows you to create subtle timing variations for added realism. Rock drummers, for instance, often achieve an exciting feeling of tension by slightly delaying their off-beat on the snare drum. This is easy to do with Step Write.

In the following example, the SD is entered using a Quantize rate of 1/96 (= OFF). To obtain the desired delay, input the SD notes one step later than the 2nd (beat 25) and 4th (beat 73) quarter notes, i.e. on beats 26 and 74.



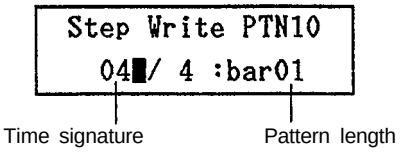
* You can exit from Step Write mode any time by pressing STOP/CONTINUE.

* Memory Protection (UTILITY Job #03) must be off when using Step Write.

OPERATION

• TIME SIGNATURE AND PATTERN LENGTH

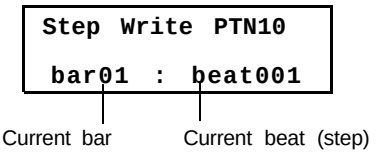
These settings are basically the same as for Real Time Write. Making sure the PTN LED is lit and the Pattern location you wish to write to is selected, press STEP WRITE. If the location is empty, the following display will appear:



If necessary, adjust these values as explained under Real Time Write.

• WRITING A PATTERN

1. Set the Quantize rate according to the instrument part you want to enter, then press STEP WRITE.
2. Press START.



3. Input (write) the desired voice by tapping its Instrument key. Rests or blank steps are input by pressing + l/YES. Voices can be heard when input and during successive cycles.

* Pressing - l/NO lets you revert to lower bar numbers.

* With Step Write, only one note can be input at a time. Additional notes on the same beat are entered during successive runs through the Pattern.

4. Input successive "layers" of sounds as the Pattern continues its cycles, if necessary adjusting the Quantize rate for various instruments.

* To accent beats, hold down one of the green ACCENT keys while tapping an Instrument key.

* Mistakes can be erased as you go along by holding the CLEAR key and tapping the respective Instrument key on the beat of the note you want to delete.

5. To stop writing, press STOP/CONTINUE.
Pattern Selection mode is entered and you can now play your Pattern by pressing START.
If you want to make changes, stop the Pattern and re-enter Step Write (or Real Time Write) mode.

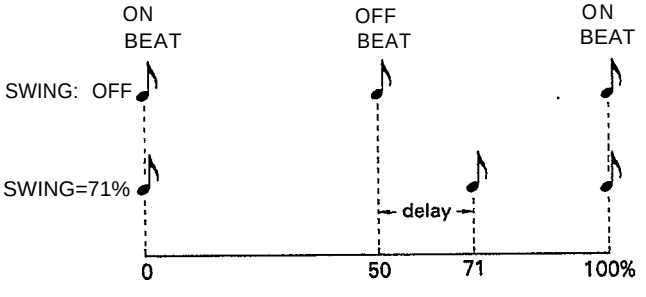
SWING

FUNCTION Creates a jazz swing "feel" when writing Patterns in Real Time.

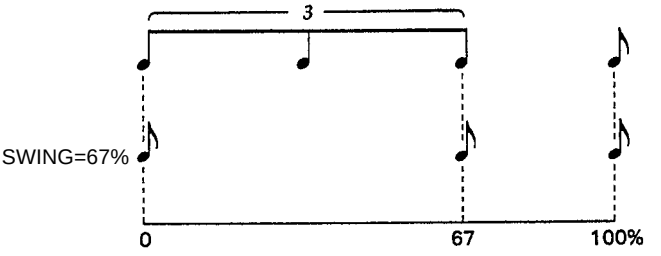
This function can only be used with a Quantize rate of 1/8 or 1/16.

If the length of a quarter note is taken to be l00%, the off-beats of a bar will normally occur at 50%. By delaying this off-beat by a certain amount, a swing feel is obtained.

Five swing rates with differing delays are available, from 54% for a very subtle effect to 71% for a very pronounced swing.



A setting of 67% creates a triplet-type shuffle effect.



OPERATION

1. In Pattern Mode, before or during Real Time Write, press SWING.

2. Select the swing rate with the + l/YES and - l/NO keys. Swing Rates: off, 54%, 58%, 63%, 67%, 71%.

* When Quantize is set to l/16, only swing rates 58% and 67% can be used.

* Whether or not Swing is turned on can be checked by pressing QUANTIZE.

PATTERN/VOICE CLEAR

FUNCTION Deletes entire Patterns, or erases specified voices from a Pattern.

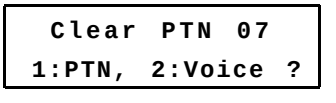
When you are not happy with a Pattern (or need more memory space), you can clear (delete) it instantly with this function.

It is also possible to erase any instrument voice from within a Pattern. This is practical both for correcting mistakes and for re-arranging Patterns, using only certain instrument parts to create variations or totally new Patterns. (If you want to keep the existing pattern, you must first copy it to a different location using PATTERN COPY before starting to arrange it.)

* All 100 Patterns can be cleared simultaneously with UTILITY JOB #05.

OPERATION

1. Making sure Memory Protect is off, select the Pattern you want to delete (or from which you want to erase an instrument), then press CLEAR.



• **CLEARING ENTIRE PATTERNS**

2 . Press numeric key 1 to specify Pattern Clear. The display will ask you to confirm:

```
Are you sure?
```

3. a) If you are, press + l/YES.
   The message "completed!" will appear for a second, then the display reverts to Pattern Selection.
   b) If you want to cancel Clear operation, press - l/NO instead.

* If the selected Pattern location was empty in the first place, "completed!" will not be displayed.

• **CLEARING VOICES**

2. Press numeric key 2 to specify Voice Clear. The display will ask you to

```
Select Voice
```

3. Specify the voice you want to erase by tapping the respective Instrument key. The selected voice is shown on the LCD.

```
Clear  PTN 07
clear 47-Crash
```

4. Press +/YES if you want to erase the displayed instrument. The display will ask

```
Are you sure?
```

3 . a) If you are, press + l/YES.
The message "completed!" will appear for a second, then the display reverts to Pattern Selection.
b) If you want to cancel the Clear operation, press - l/NO instead.

PATTERN COPY/APPEND

FUNCTION Copy a Pattern to another memory location, or append one Pattern to another.

COPY: Copying is useful when you want to to create a new version of an existing Pattern while retaining the original one, or if you want to organize Patterns in a particular memory location order.

APPEND: With this function, you can create new, larger Patterns by joining existing ones, appending one Pattern to the end of the other.

* Only Patterns with the same time signature can be joined.

OPERATION

• **PATTERN COPY**

1. Making sure Memory Protect is off, select the Pattern you want to copy, then press COPY.

```
Copy PTN 27
l:Copy, 2:Append?
```

2. Select Copy with numeric key 1.

```
Copy PTN 27
to PTN **
```

3. Enter the memory location you want to copy to with the numeric keys.

* Should you decide to change the Pattern to be copied at this stage, move the cursor between the lower and upper display lines with ACCENT 2 and input a different Pattern number with the numeric keys.

4. Press ENTER (START).

a) If the selected destination was empty, the display will first show "completed", then the number of the Pattern just copied.

b) Should the selected destination already contain data, the display will ask:

```
Rewrite PTN 78 ?
```

Pressing + l/YES will copy to the displayed pattern location, erasing its present data in the process.
If you want to copy to an empty destination instead, press - l/NO and repeat the Copy procedure.

• **PATTERN APPEND**

1. Select the Pattern you want to append, then press COPY.

```
Copy PTN 78
1:Copy,  2:Append?
```

2. Select Append with numeric key 2.

```
Append PTN 78
with PTN **
```

3. Enter the Pattern you want to append the selected Pattern to, using the numeric keys.

* The cursor can be moved between the lower and upper display lines with ACCENT 2.

4. Press ENTER (START).
The message "completed!" will be displayed.

EDIT PATTERN

FUNCTION To check Pattern contents and/or alter the pitch, level, decay and pan parameters of each note.

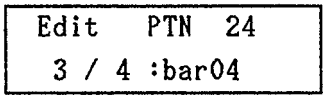
One of the most versatile and creative functions of the RX7, Edit Pattern lets you step through a Pattern note by note, altering parameter settings and turning Effect on or off for each individual note as you go. You can check/change the notes of all instruments, or just of a selected single instrument.

Subtle alterations in the parameter settings can add "human" nuances for uncanny realism, making RX7 Patterns practically indistinguishable from live drum sounds. Besides, Edit Pattern can be used e.g. for effects such as fade-out (by gradually decreasing levels) or automatic stereo panning (by altering pan settings of successive notes).

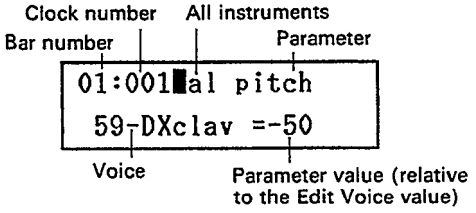
* The parameter adjustments made in the Edit Pattern mode affect individual NOTES of a specific Pattern ONLY, and not the corresponding VOICE as a whole.
The basic parameter settings are all determined by Edit Voice. Therefore, Edit Pattern settings are always displayed as RELATIVE values (offsets, indicated by + or -). These displayed values are relative to the basic Edit Voice values. Alterations made with Edit Voice therefore affect all Edit Pattern settings for that instrument equally.

OPERATION

1. Select the Pattern you wish to edit, then press EDIT PATTERN.

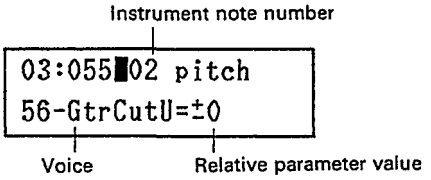


2. Press START.



The above display shows the All Instruments mode, in which you can step through all notes in the Pattern using + 1/YES.

Single Instrument mode lets you limit display to notes of a certain voice, which is selected by tapping its Instrument key. (You can always revert to All Instruments mode by pressing EDIT PATTERN). The display will change to



* Should the display show "—" as the parameter value, this indicates that the selected voice is not used in this Pattern.

* "dmp" displayed as parameter value means that the corresponding Instrument key was pressed during Real Time Write while DAMP was on. No sound will be heard for this note.

* If you want to select an instrument currently not played by the Instrument keys, assign it using KEY ASSIGN Job #01.

* The clock number indicates on which l/96th beat the note sounds (1/96 being the the highest Quantize rate).

* The instrument note number shows which note within the voice's part (first, second, third,...) is currently displayed.

Pressing the + 1/YES key to shift to the next note sounds the note that was displayed.
Press - 1/NO to step backwards through the Pattern.

3. Use the numeric keys as follows to select the parameter you want to check or edit.

1: pitch 2: level 3: pan
4: decay 5: effect (on/off only)

* For an explanation of "decay" and "effect", see the corresponding chapters in the Edit Voice section.

4. You have two options concerning how to adjust the displayed parameter:

a) Leaving the cursor where it is (allowing you to switch between notes with + 1/YES and - 1/NO), you can alter the value with the DATA slider.

b) You can move the cursor to the lower line by pressing ACCENT 2 and adjust the value with the + 1/YES and - 1/NO keys and DATA slider.
(In either case, pressing numeric keys switches between parameters.)
As soon as a value is altered, it will start to blink.

5. To input the value, press ENTER.
The display will stop blinking, and you can now hear the alteration when cycling through the Pattern again (or after backing up with - 1/NO).

6. To exit Edit Pattern any time, press STOP/CONTINUE.

OVERVIEW

In the Song Mode, you can

* Select any Song and play it at the desired tempo, starting at any specified Part.
* Assemble (edit) up to 20 Songs consisting of 999 Parts each and store them in the internal memory.
* Insert repeats, tempo changes (accelerando, ritardando), and volume changes (crescendo, decrescendo) in a Song.
* Set a search mark in a Song for instant location and playback/editing.
* Copy a Song or part of a Song.
* Erase (clear) a Song or part of a Song.

On the RX7, a "Song" means a combination of Patterns ("Parts") making up a complete accompaniment for a piece of music. In GETTING ACQUAINTED, you got to know two examples, and more can be heard by using UTILITY Job #07, "load demonstration Songs". After having created the necessary rhythm Patterns, you can connect them in a natural manner with the Song functions, complete with tempo and volume changes.

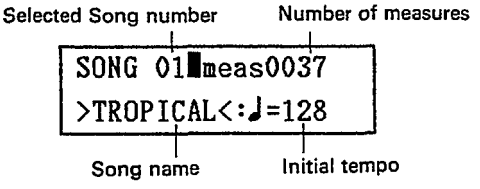
A Part can contain not only a Pattern, but other data such as a Repeat Command or Tempo Change.

* While most Song functions are accessed directly with the Pattem/Song keys⑰, the four functions Mark Search and Set, Song Name and Initial Tempo are called up by a Job number according to the menu above ACCENT 1.
* To use Song functions, first make sure that the SONG LED is lit, showing that the RX7 is in Song Mode.
* The PATTERN/SONG key switches the RX7 between Pattern and Song Mode. To enter Song Mode press this key until the SONG LED⑥ lights.
* Remaining Song memory space can be checked with UTILITY Job #02.

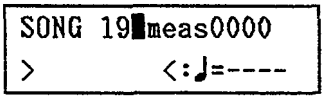
SONG SELECTION

FUNCTION Selects a Song for playback, editing, etc.

This function is always selected when Song mode is entered.



The RX7 can store up to 20 Songs in memory locations numbered 00 through 19. Besides the Song number and name, the Song Selection display shows its number of measures (bars) and initial tempo. If no data has been entered yet, the display looks like this:



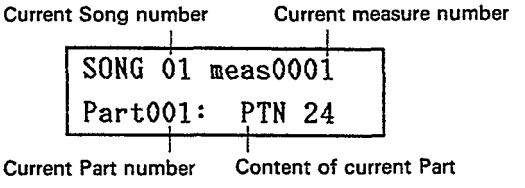
OPERATION A Song is always selected directly by entering its two-digit number with the numeric keys.

SONG PLAYBACK

FUNCTION Playback of selected Song.

OPERATION

1. After selecting the desired Song, press START ⑭ or STOP/CONTINUE ⑬. (The initial tempo set with Job #04 is only effective if START is used.) The RUN LED ⑪ will light, and the display will change to



The display continues to change, showing the current position in the Song and its Part content, until playback stops at the end of the Song.

* If you wish to begin playback from a Part other than the first one, select that Part with the - 1/NO and + 1/YES keys. (Holding these keys down allows rapid selection.) Press STOP/CONTINUE to start.

2. To stop playback any time, press STOP/CONTINUE. The RUN LED will go out, and the first measure appears again on the LCD.

3. To restart playback from where it was stopped, press STOP/CONTINUE again. Pressing START instead re-commences playback from the beginning of the Song.
4. After having stopped playback, you can select any other Song with the numeric keys.

* Tempo adjustments can be made as explained for Patterns.

* Click can be used but must be set in the Pattern Mode.

REPEAT PLAYBACK

FUNCTION Continuously repeat a selected Song.

OPERATION

1. After selecting the desired Song, or during playback of that Song, press the SWING/REPEAT button. The display will show

```
repeat    off
```

2. You can now turn the repeat function on and off with the - 1/NO and + 1/YES keys.

EDIT SONG

FUNCTION Create or alter Songs by combining Patterns.

OPERATION

1. Select the desired Song number (memory location) and press REAL TIME WRITE/EDIT SONG.

```
Edit   SONG 00
Part001= PTN **
```

2. Input the number of the Pattern you want to use for Part 1 with the numeric keys.
3. Switch to the next Part (and then forward/backward between Parts as necessary) with the - 1/NO and + 1/YES keys.
4. Input the contents of the following Parts - i.e. a Pattern, a repeat symbol, a tempo or volume change command or a search mark.

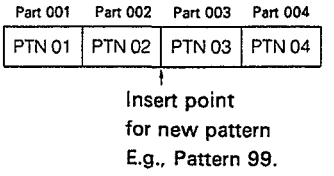
Other practical Edit Song functions you can now use are Insert, Delete and Pattern Copy.

INSERT

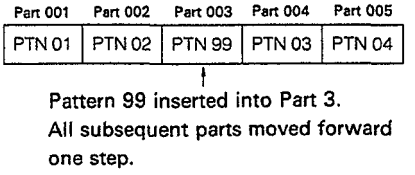
FUNCTION Insert new Parts in a Song.

In order to make room for the inserted Part in an existing song, the RX7 shifts all subsequent Parts forward. Example: To insert a Part consisting of Pattern 99 between Parts 02 and 03, select Part 03 for insertion.

BEFORE INSERTING



AFTER INSERTING



OPERATION

1. Select the Part of the Song where you wish to insert a new Part and press STEP WRITE/INSERT. The prompt mark "**" will appear, asking you to input the contents of the inserted Part.

```
Edit   SONG 04
Part041= PTN **
```

2. Input either a Pattern or any other of the possibilities - a repeat symbol, a tempo or volume change command or a search mark.
   To cancel data entry, press - 1/NO.

DELETE

FUNCTION Erase Parts of a Song.

Delete is complementary to Insert - all Parts after the deleted Part are moved backwards.

OPERATION

1. Select the Part of the Song you wish to delete and press QUANTIZE/DELETE. The display will ask you to confirm:

```
Delete  PTN 08?
```

2. Press + 1/YES to confirm.
   The display will show the contents of the "next" Part, which now has the number of the deleted Part.
   To cancel delete operation instead, press - 1/NO.

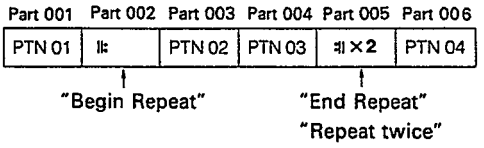
REPEAT COMMANDS

FUNCTION Enters Repeat commands in a Song for repetition of specified Parts.

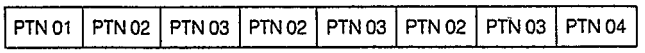
Instead of entering the same Pattern numbers over and over again in a Song, you can use Repeat commands. Specified Parts or groups of Parts can be repeated up to 99 times, and "nesting" (repetitions within repetitions) on up to ten levels is also possible.

There are two Repeat commands, Begin Repeat and End Repeat, which are input at the beginning and end of the Part(s) to be repeated.

The number of repetitions can be specified within the End Repeat command. Remember that this number is always ONE LESS than the actual number of times you hear the specified section (which = 1 playback + N repetitions).



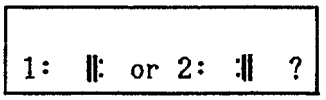
ACTUAL-PLAYING SEQUENCE



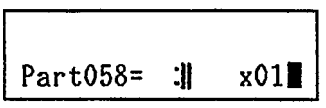
* Input of the Repeat commands is often easiest when done in combination with Insert, after having programmed the Song without repetitions.

OPERATION

1. Select the Part of the Song from which you want repetition to commence, and press SWING/REPEAT. The display will ask you to select the Begin or End Repeat command.



2. Press numeric key 1 to input a Begin Repeat command, then continue editing (entering Parts) until your reach the location for the End Repeat command.
3. Press SWING/REPEAT. The display will again ask you to select the Begin or End Repeat command.
4. Press numeric key 2 to input an End Repeat command.



5. You can now input the desired number of repetitions with the numeric keys and then continue editing.

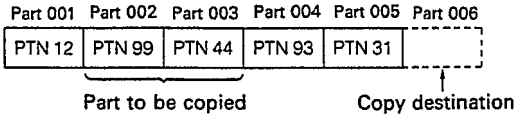
PART COPY

FUNCTION Copy a specified number of consecutive Parts to any subsequent location in a Song.

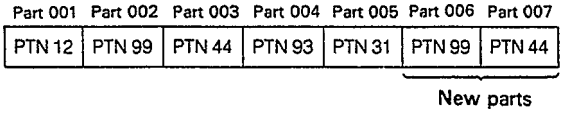
NOTE: Any Parts following the copy destination point will be erased. In effect, this means you can copy only to the end of a Song.

• COPYING TO END OF SONG

BEFORE COPYING

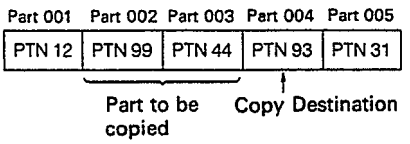


AFTER COPYING

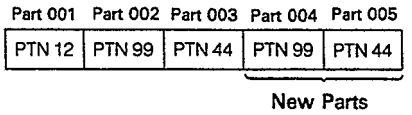


• COPYING TO DESTINATION BEFORE END OF SONG

BEFORE COPYING



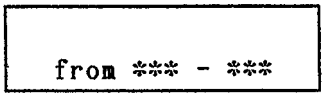
AFTER COPYING



Original Parts following copy destination are cleared.

OPERATION

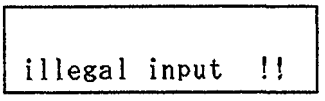
1. Select the Part of the Song to which you wish to copy to (= copy destination) and press COPY. The upper line of the LCD will ask you to specify the first and final Parts of the section you want to copy:



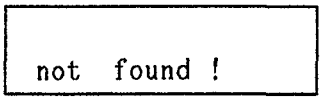
2. Enter the three-digit numbers of the first and final Parts of the section to be copied, then press + 1/YES or ENTER to complete data input.
   Copying is completed, and the LCD will display the number of the empty Part location now following the end of the copied section.

* Should you make a mistake in specifying the section to be copied, one of the following error messages will appear and copying will be canceled.

a) If the number of the first copied Part is larger than that of the final one, or a copy section is specified that includes the destination Part, the LCD will show:



b) Should you specify a Part for copying that does not exist, the LCD will show:



TEMPO CHANGE COMMANDS

FUNCTION Enters Tempo Change commands in a Song to make it gradually slower or faster.

Natural, gradual changes in tempo - accelerando (increase) or ritardando (decrease) - can be created with these commands. Both the value (in quarter notes/minute) and the duration (in quarter notes) of the tempo change can be specified.

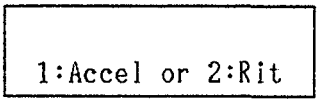
By entering a Tempo Change command within a repeated section, you can cause accelerando or ritardando over longer passages than the 99 quarter notes which normally is the limit for a single tempo change.

* It is generally easiest to input tempo changes after having completed a song, by using Insert.

NOTE: Unless you balance accelerandi with ritardandi, your Song will end in a different tempo than it started with. If you have not set an initial tempo for the Song and start to play it again immediately, it will commence at this previous final tempo. It is therefore recommended that you use Job #04 to specify an initial tempo.

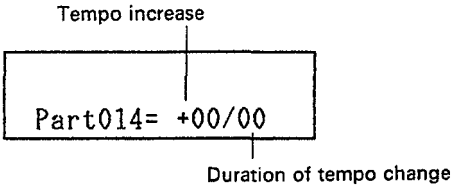
OPERATION

1. Select the Part of the Song from which you want the tempo to start changing, and press CLICK/TEMPO CHANGE. The display will ask you to select Accel(erando) or Rit(ardando).

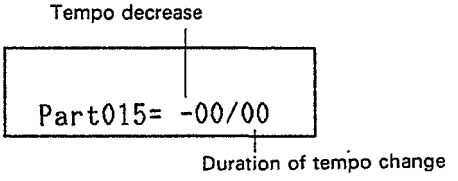


2. Press numeric key 1 to select accelerando, key 2 for ritardando.

Accelerando:



Ritardando:



3. Input the value of the tempo change (i.e. by how much you want the tempo to increase/decrease) as the numerator and the duration of the tempo change as the denominator of the fraction shown on the LCD, using ACCENT 2 to switch between the two.
   Say you want the tempo to increase by 15 quarter notes per minute over 4 measures. This means you have to set tempo change (accelerando) to +15/16, because 4 measures correspond to 16 quarter notes.
   Instantaneous tempo changes can be achieved by setting the denominator to 0.

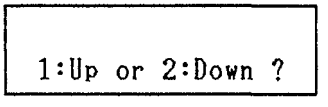
VOLUME CHANGE COMMANDS

FUNCTION Enters Volume Change commands at any location in a Song, to raise or lower level.

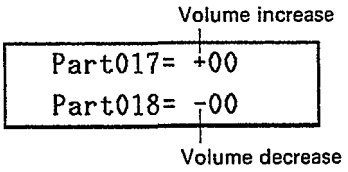
Any volume change within the voice level limits (0 ~ 63) is possible. By entering several Volume Change commands in subsequent Parts or using them in repeated sections, gradual volume changes can be achieved (e.g. for climaxes, fade-in or fade-out).

OPERATION

1. Select the Part of the Song where you want the volume to change, and press EDIT PATTERN/VOLUME CHANGE. The display will ask you to select Up(ward) or Down(ward) change.



2. Press numeric key 1 to select Up or key 2 for Down.



3. Input the degree (value) of volume change with the numeric keys.

SONG COPY

FUNCTION Copy entire Songs to another location. Useful when you want to alter a Song while retaining the original version.

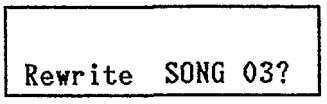
OPERATION

1. Select the SONG you want to copy and press COPY. The LCD will ask you to input the copy destination number (new Song location).

2. Enter the destination number with the numeric keys, then press + 1/YES to copy.
   The message "completed!" shows that copying has been carried out.

* Should you decide to copy a different Song after having specified the copy destination, move the cursor to the upper LCD line with ACCENT 2 and enter a different Song number.

* If the specified copy destination already contains a Song, this Song will be erased to make room for the new Song. To avoid mistakes, the LCD asks



if the copy destination is occupied. You can now cancel Song Copy with the - 1/NO key or execute copying with the + 1/YES key.

SONG CLEAR

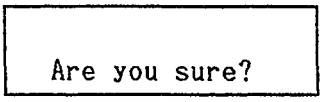
FUNCTION Erase entire Songs.

* It is also possible to clear all 20 Songs simultaneously with UTILITY Job #06.

OPERATION

1. Select the Song you want to erase and press CLEAR.

2. Press + 1/YES. The LCD will ask



3. Press + 1/YES to confirm (or - 1/NO to cancel Song Clear).
   After displaying the message "completed!", the LCD will show the cleared Song location.

JOBS

The Song functions listed on the extreme left of the front panel Job Menu under SONG and EDIT SONG are selected by entering the respective Job number, i.e. by pressing JOB and then inputting a two-digit number with the numeric keys.

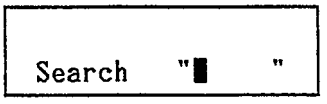
Except for Job #01, Mark Search, which is also available in Song Selection mode, these Jobs can only be accessed during Edit Song mode.

JOB #01: MARK/PART SEARCH

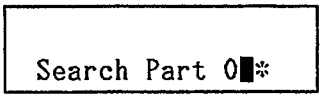
FUNCTION Instantly locate a specified point in a Song. A very useful feature both for playback and editing, this lets you instantly locate any Part in a Song or a location marked according to Job #02.

OPERATION

1. Select Job #01.
   The lower line of the display will ask you to input the Pattern or Mark you want to locate.

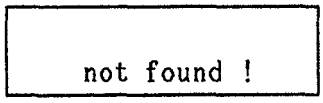


2. a: PART SEARCH
   If you are looking for a certain Part, enter its three-digit number with the numeric keys. As soon as the first digit is input, the display will change to



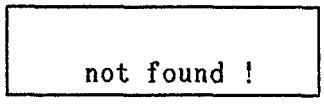
After all three digits have been entered correctly, the Part you were looking for will appear on the display.

Should you make a mistake during number entry (for instance forgetting to start with a zero for numbers under 100), the display will show



If this occurs, select Job #01 again and carefully enter the right number.

2. b: MARK SEARCH
If you are looking for a certain Mark previously input with Job #02, enter the Mark's name using the alphabet keys (= Instrument keys) and numeric keys as explained for Job #02 below.
After the entire Mark name has been entered correctly, the marked location you were looking for will appear on the display.
If you have made a mistake during Mark name entry, the LCD will show



If this happens, select Job #01 again and carefully enter the correct Mark name.

JOB #02: MARK SET

FUNCTION Name a specific point in a Song for later instantaneous location.

Any point in a Song can be given a name consisting of up to six characters (letters and numerals). This "Mark" is useful both for making the structure of the Song clearer (by entering names such as "INTRO" or "1.MELO") as well as for later instant location at any time using Job #01 explained above.

A Mark is also counted as a Part.

OPERATION

1. Making sure that the Edit Song mode is entered, select Job #02.
The lower line of the display will ask you to input the Mark you want to name.

2. Input a name of up to six characters using the Instrument keys and numeric keys.

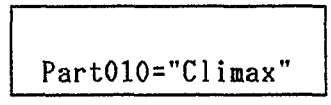
* In addition to the Instrument keys, ACCENT 1 and 2 are used to input Y and Z. EFFECT ⑱ enters a space, and DAMP ⑲ a period.

Lower case letters can be input by holding down SHIFT/COMPARE while pressing a letter key.

The cursor is moved backward and forward with the - 1/NO and +1/YES keys.

* Note that Mark names can not begin with a numeral.

3. When you have completed name input, press ENTER. The display will change to



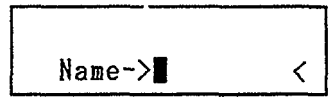
indicating that a Marker with the displayed name has been entered in the indicated Part location.

JOB #03: SONG NAME

FUNCTION Name or rename a Song.

OPERATION

1. Making sure that the Song you want to name is selected and Edit Song mode entered, access Job #03.
The lower line of the display will ask you to input the Song name.



2. Input a Song name of up to eight characters as explained above for Mark name entry.

* Unlike Mark names, Song names may begin with a numeral.

3. When you have completed input of the Song name, press ENTER.
The LCD will revert to normal Edit Song display, indicating that the Song name has been entered.

* This function can also be used to rename Songs, i.e. alter their present name.
The Song's current name will be displayed when the Song Name Job is called up, and can then be changed in the same way as entering a new name.

JOB #04: INITIAL TEMPO

FUNCTION Set the initial tempo of a Song.

Allows you to determine the tempo with which a Song will always start during playback. (Tempo changes within the Song remain valid).

Tempo can still be altered manually at any time.

OPERATION

1. Select the Song whose initial tempo you want to set, enter Edit Song mode and select Job #04.
   The lower line of the display will show whether the Initial Tempo setting is on or off.

2. If necessary, turn Initial Tempo on with + 1/YES. (Initial Tempo can be turned off by pressing - 1/NO, then ENTER.)
3. Press ENTER to display the current Initial Tempo value.

4. Alter the initial tempo setting with the - 1/NO and + 1/YES keys or by entering the new value directly with the numeric keys.
5. Press ENTER to input the new value.
   The LCD will change to the Edit Song display.

CHAINS

OVERVIEW

The Chain Mode lets you

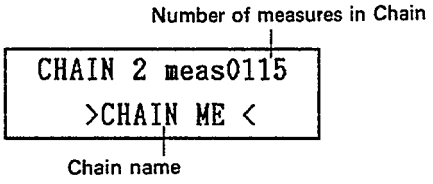
* Create a maximum of 3 Chains consisting of up to 90 Songs (Steps).
* Select a Chain and play it at the desired tempo.
* Erase (clear) a Chain. On the RX7, the word "Chain" refers to a combination of Songs, ordered as "Steps" within the Chain. You can thus create accompaniment sequences for whole groups of Songs, either for live performance or recording.
* To use Chain functions, always enter Chain Playback Mode first by pressing CHAIN. Select other Jobs by then pressing Job and entering the Job number.

JOB 01: CHAIN PLAYBACK

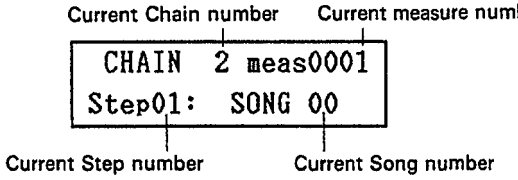
FUNCTION Playback of selected Chain.

OPERATION

1. After pressing CHAIN, select the desired Chain with numeric keys 0, 1 or 2.



2. Press START⑭ or STOP/CONTINUE⑬. The RUN LED will light, and the display will change to



The display continues to change, showing the current position in the Chain and the current Song (Step) until playback stops at the end of the Chain.

3. To stop playback at any time, press STOP/CONTINUE. The RUN LED will go out, and the first measure appears again on the LCD.
4. To restart playback from where it was stopped, press STOP/CONTINUE again. Pressing START instead re-commences playback from the beginning of the Chain.
5. After having stopped playback, you can select another Chain with numeric keys 0 to 2.

* Tempo adjustments can be made as explained for Patterns.
* Click can be used but must be set in the Pattern Mode.

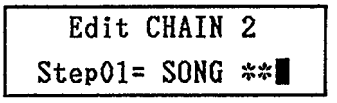
JOB #02: CHAIN EDIT

FUNCTION Combining Songs to form a new Chain, or altering existing Chains.

Creating a Chain from Songs (Steps) is basically the same as creating a Song out of Patterns and other Parts. Maximum Step number is 90.

OPERATION

1. After pressing CHAIN, select the desired Chain with numeric keys 0, 1 or 2, then access Job #02.



(If you are altering an existing Chain, the first Song number will appear in place of the prompt marks "**".)

2. Select the Song to be used for Step 1 by entering its location with the numeric keys.
3. Press + 1/YES to input the selected Song and switch to the next Step.
   (The - 1/NO and + 1/YES keys can be used to switch between existing Steps.)
   Continue this process until you have programmed the entire Chain.

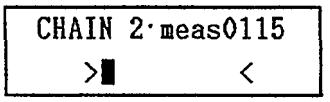
* The INSERT and DELETE keys can be used as during Edit Song.

JOB #03: CHAIN NAME

FUNCTION Naming or renaming Chains.

OPERATION

1. Either call up the Chain Playback display or select Job #03.



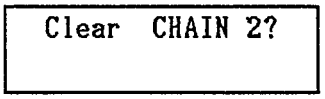
2. Input a Chain name of up to eight characters as explained above for Mark name entry.
   Pressing ENTER after writing the Chain name returns you to the Chain Playback display.

JOB #04: CHAIN CLEAR

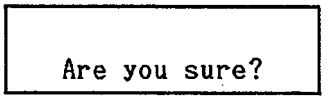
FUNCTION Erasing entire Chains.

OPERATION

1. Select the Chain you want to erase and enter Job #04.



2. Press + 1/YES. The LCD will ask



3. Press + 1/YES to confirm (or - 1/NO to cancel Chain Clear).
   After displaying the message "completed!", the LCD will show the cleared Chain location.

OVERVIEW

The Edit Voice mode lets you:

* Edit (alter) parameters such as pitch, level or pan position for any voice.
* Create special effects for individual voices, including pitch bends, vibrato and tremolo.
* Store edited data in the internal memory.
* Reset an edited voice to its original values.

The character of individual instruments can be changed dramatically with Edit Voice, particularly by adjusting a combination of parameters, such as e.g. decay rate, pitch bend rate/range and pitch.

Edit Voice allows you to set the basic values of certain parameters which can be additionally altered according to Key Assign (see below) and, on a note by note basis, with Edit Pattern as explained above. Changes made with Edit Voice also affect instruments in existing Patterns.

Press EDIT VOICE to enter this mode. The display will show the voice and editing Job last selected.

```
Edit Voice :KeyH
Decay Rate  =13
```

To specify any other Job, press JOB. The lower line of the LCD will ask you to input the number of the desired Job:

```
push Job#  --
```

Enter the Job number with the numeric keys. Data is input with the - 1/NO and + 1/YES keys and the DATA entry slider ④.
As soon as any data is altered, the "E" in "Edit Voice" will change to lower case.

```
edit Voice  :KeyH
Decay Rate  =15
```

You can compare this altered value with the previous one by pressing SHIFT/COMPARE (= STOP/CONTINUE key), in which case a bar will appear over the "e" in "edit" and the original value will be displayed.

```
ēdit Voice  :KeyH
Decay Rate  =13
```

Data cannot be altered during the "e-bar" display. (The cursor disappears). To continue editing, press SHIFT/COMPARE again.

JOB #01: VOICE SELECT

FUNCTION Select any voice for editing or for checking its parameter settings.

OPERATION

1. Select Job #01.

Instrument key the voice is currently assigned to

```
Edit Voice :KeyG
Voice:37-E.Tom4
```

2. Select the voice you want to edit or check by tapping its Instrument key or entering the voice number directly with the numeric keys. (See Voice List in the BASIC CONCEPTS AND FEATURES section.)

* Selecting a voice currently not assigned to any Instrument key displays "key-" on the upper right. Such voices may be edited, but you can only hear the results if you play the corresponding key on a connected and appropriately assigned MIDI keyboard.

3. Continue by selecting one of the following editing Jobs.

NOTE: Edited values have to be stored (Job #07) to become permanent. If you have edited a voice but do not perform Voice Store, the first "e" of "edit Voice" will remain lower case, and all edited values will by lost if a different voice is selected (or the same one specified again) with Job #01.
Therefore, pay attention if you enter Voice Select mode and the first "e" of "edit Voice" is lower case. (Lost data can be retrieved from the edit recall buffer with Job #09.)

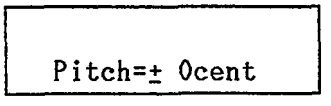
JOB #02: PITCH

FUNCTION Sets basic pitch of selected voice.

- Range: -3600 ~ +2400 cent (in 10-cent steps)
  (= -3 to +2 octaves)
  (100 cent = 1 semitone)

OPERATION

1. Select Job #02. The lower display line will show



2. To adjust the pitch upward or downward in semitone (100 cent) steps, use the DATA slider or -1/NO and + 1/YES keys.
   For finer adjustments in 10-cent steps, hold down the numeric key 0 and press - 1/NO or + 1/YES.

JOB #03: DECAY

FUNCTION Sets basic decay rate of selected voice.

- Range: Decay Rate = 01 ~ 31

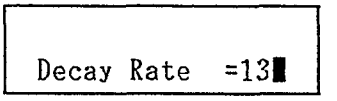
Think of the "decay" of a sound as the speed with which it dies out. The faster the decay (= the HIGHER the Decay Rate value), the SHORTER the sound. The slower the decay (= the lower the Decay Rate value), the longer the sound.

Try changing the Decay Rates of various voices to get a feeling for the influence of this setting on the sound characteristics.

* The Decay Rate setting has no effect on "reverse" voices.

OPERATION

1. Select Job #03. The lower display line will show



2. To lengthen or shorten the decay (= lower or raise the Decay Rate value), use the - 1/NO and + 1/YES keys or DATA slider.

JOB #04: BEND

FUNCTION Sets bend parameters of selected voice.

- Range: Bend Rate = 0 ~ 60
  Bend Range = -60 ~ +60

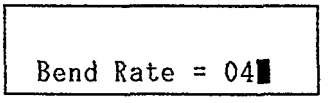
The expression "bend" as used for the RX7 refers to linear pitch bend effects which automatically raise or lower the pitch of a note while it is being played.

Two parameters can be adjusted - Bend Rate, which determines the speed of the pitch bend, and Bend Range, which determines how great the change in pitch will be.

OPERATION

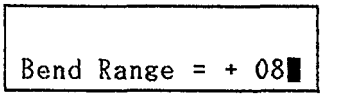
1. Select Job #04. The lower display line will show either of the following display types. To switch between them. press numeric key 1 (→ Rate) or 2 (→ Range).

1:



The Bend Rate can be set between 0 and 60 (unit: 10 cent per 10 microseconds). Increasing this value speeds up the pitch bend effect.

2:



The Bend Range can be set between - 60 and + 60 (unit: 100 cent = 1 semitone). Raising this value increases the pitch difference between the beginning and the end of the bend effect.

JOB #05: VOICE LEVEL

FUNCTION Sets basic volume of selected voice.

- Range: Voice Level = 0 ~ 63

OPERATION

1. Select Job #05. The lower display line will show

2. Adjust the volume (= level) with the DATA slider or - 1/NO and + 1/YES keys.

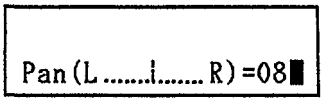
JOB #06: PAN

FUNCTION Sets basic pan position of selected voice.

- Range: 0 (full left) to 15 (full right)

OPERATION

1. Select Job #06. The lower display line shows



The basic pan position of the selected voice can be confirmed visually with the above graphic display.

2. Adjust the pan position with the - 1/NO and + 1/YES keys or DATA slider.

* The pan position affects the maximum polyphonic number that can be set with Job #011. Higher polyphonic numbers can be set when pan is full left, full right or exactly centered, than with other stereo positions.

JOB #07: VOICE STORE

FUNCTION Saves all edited data of currently selected voice in the internal memory.

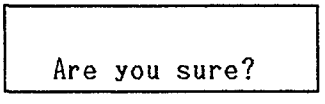
Unless the edited data of a voice is stored with this function, it will be cleared as soon as a different voice is selected for editing.

Storing Edit Voice settings with this function makes them permanent. However, voices can be restored to their original (factory) settings with Job #08, Voice Initialize.

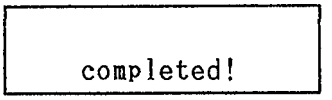
OPERATION

1. Select Job #07. The lower display line asks you

2. If you made a mistake and do not want to store, press - 1/NO. Otherwise press + 1/YES. The display will ask



3. Confirm by pressing + 1/YES, or press – 1/NO to cancel.
4. If you chose YES, the message



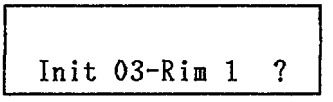
will appear, and the "e" in "edit Voice" on the upper LCD line will change to a capital "E", indicating that another voice can now be selected for editing.

JOB #08: VOICE INITIALIZE

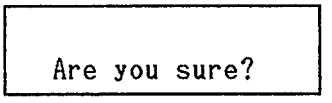
FUNCTION Restores edited voices to their original parameter settings.

OPERATION

1. Select Job #08. The lower display line asks you



2. If you do not want to initialize, press - 1/NO. Otherwise press + 1/YES. The display will ask you to confirm:



3. Press + 1/YES (or - 1/NO to cancel).
The message "completed!" is displayed.

* Though the voice has now been initialized, the initial values are still not saved - indicated by the "e" in "edit Voice" remaining lower case. Unless you store these initial values with Job "07", the settings will revert to the altered ones prior to Voice Initialize as soon as you select another voice for editing.

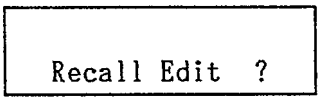
JOB #09: EDIT RECALL

FUNCTION Recalls edited parameter settings that have been mistakenly erased.

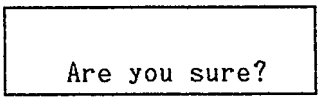
As explained under Voice Store, the edited data of a voice is lost as soon as a different voice is selected with Job #01, unless it has been stored. Should you forget this and switch to a different voice before saving data you are currently editing, the data of the last voice edited can be recalled with this function.

OPERATION

1. Select Job #09. The lower display line asks



2. If you do not want to recall, press - 1/NO. Otherwise press + 1/YES. The display will ask you to confirm:



3. Press + 1/YES (or - 1/NO to cancel).
The previously edited data is recalled, and the LCD switches to the Voice Select display. You can now continue editing that voice or store the recalled data.

JOB #10: LFO

FUNCTION Set LFO parameters for selected voice.

On the RX7, LFOs (Low Frequency Oscillators) can be used to alter the pitch and/or volume of voices for a variety of effects such as vibrato, tremolo or "distortion". The LFO parameters available are

1: Frequency - determines the speed of the LFO effect.
Values: 2.4, 5.6, 6.0, 6.4, 6.9, 9.8, 48.8, 78.1 Hz (cycles per second)

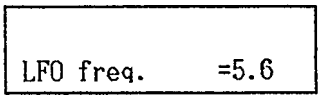
2: AMD (Amplitude Modulation Depth) - determines the intensity of the effect on the amplitude (= volume level) of a voice ("tremolo" depth).
Range: 0 ~ 3

3: PMD (Pitch Modulation Depth) - determines the intensity of the effect on the pitch of a voice ("vibrato" depth).
Range: 0 ~ 7

OPERATION

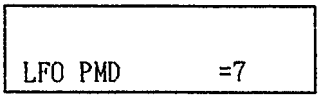
1. Select Job #10. One of the following types of display will appear.
Switch between them with numeric keys 1,2,3 according to the menu written immediately above the PATTERN SONG key.

1:



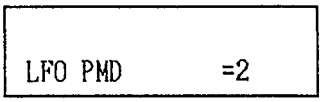
Raising the value increases the cycle speed.

2.



0 indicates no effect. Higher values increase vibrato intensity.

3:



0 indicates no effect. Higher values increase tremolo intensity.

Experiment with various settings to get an idea of the possibilities.

JOB #11: POLY

FUNCTION Sets polyphonic number of selected voice.

- Range: 1 ~ 8

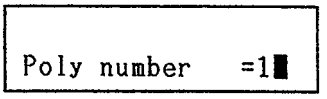
The "polyphonic number" determines the maximum number of notes that can be output simultaneously by one voice. Usually, it is left at 1. Since only one note can sound at a time with this setting, hitting the same Instrument key consecutively will damp the previous output of that voice. During fast drum rolls, for instance, this leads to an unnatural effect, which can be avoided by raising the poly number.

The poly number value is also set to over 1 with instruments such as Brass or DX7-Orchestra when these are to be used for chords (harmonies).

* The maximum polyphonic number that can be set for a voice depends on its pan setting.

OPERATION

1. Select Job #11.



2. Use the - 1/NO and + 1/YES keys or DATA slider to input the desired polyphonic number.

JOB #12: EFFECT

FUNCTION Sets effect parameters for selected voice.

Basically, this Job functions somewhat like a combination of digital delay and pitch shifter: it repeats the sound 2, 3 or 4 times, depending on the Simul Number setting. (If the delay time is 0 and the poly number is set accordingly, these "repeats" sound simultaneously to form a "chord" depending on the pitch settings.) Since each of these repeats can have a different pitch, level or pan setting, you can, for instance, have the the sound bounce between left and right channels while playing a "melody", or gradually recede towards the left background with a rising pitch.

With a bit of imagination and experimentation, the following parameters allow you to create a whole host of interesting effects.

Parameter	Range	Function
1: Simul number	2 ~ 4	Determines number of “repeats”.
2: Delay time	0 ~ 5 0	Time between repeats (in units of 10 milliseconds).
3: Pitch	-600 ~ +600	Pitch difference between the individual repeat sounds and the original sound (in units of 10 cent).
4: Level	-63 ~ +63	Volume difference between the individual repeat sounds and the original sound.
5: Pan	-14 ~ +14	Difference between the pan positions of the individual repeat sounds and the original sound.

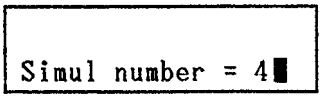
The parameters are selected with the corresponding numeric keys 1 through 5. To switch between parameter value displays for the individual repeat sounds (2nd, 3rd and 4th pitch/level/pan), press the corresponding numeric keys 3 through 5.

* Effects can be switched on and off for all voices with the EFFECT key ⑱. The EFFECT LED ⑨ lights up when Effect is on.
  However, the EFFECT key does not turn off effects for voices that are already programmed in Patterns.
* Effects can be turned on and off within programmed Patterns using Edit Pattern.

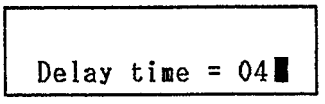
OPERATION

1. Select Job #12, then the desired effect parameter using numeric key

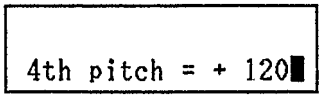
1:



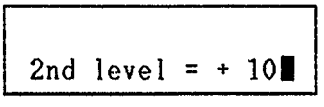
2:



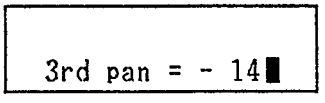
3:



4:



5:



To switch between, say, 4th and 2nd pitch, press numeric key 3. Use the - 1/NO and + 1/YES keys or DATA slider to input data.

OVERVIEW

The Key Assign mode lets you:

* Assign any voice to any Instrument key.
* Assign one voice to the whole upper row of Instrument keys.
* Alter the pitch, level, pan and decay of voices for each Instrument key.
* Adjust the accent levels for each Voice.
* Assign a function to a connected foot switch.
* Save all Key Assign data to one of four internal memory locations.
* Load Key Assign data from memories.

NOTE: The "Drum Set" Chart at the end of this manual will help you remember your Key Assign settings. Copy it and enter the data for your individual "drum sets".

Press KEY ASSIGN to enter this mode. The display will show the Job selected last. To specify any other Job, press JOB. The lower line of the LCD will ask you to input the number of the desired Job:

```
push Job#  --
```

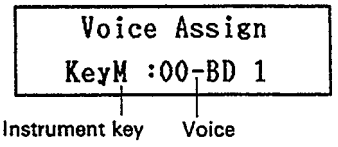
Enter the Job number with the numeric keys.
Data is input via the - 1/NO and + 1/YES keys and the DATA entry slider ④.

JOB #01: VOICE ASSIGN

FUNCTION To assign any voice to any Instrument keys.

OPERATION

1. Select Job #01.



2. Select the desired Instrument key by tapping it. (This also lets you check which voices are currently assigned to which keys.)
3. Use the - 1/NO and + 1/YES keys and/or the DATA entry slider to select the voice you want to assign to the key, or input the voice number directly, referring to the Voice List in the BASIC CONCEPTS AND FEATURES section.

* The voice is assigned as soon as it appears on the LCD. Note that all data settings previously made for the selected Instrument key according to the following Job #02 are thereby erased.

JOB #02: PARAMETER ASSIGN

FUNCTION To alter the pitch, level, pan and/or decay of voices assigned to specific Instrument keys.

Note the difference to alterations made with EDIT VOICE: The Parameter Assign changes ONLY affect the voice as it is played by the selected Instrument key, while the Edit Voice changes affect that voice in all cases (i.e. also in existing patterns or as played by external MIDI devices). Therefore, similar to Edit Pattern, the values set with Parameter Assign are displayed for each Instrument key as offsets relative to the basic Edit Voice value.

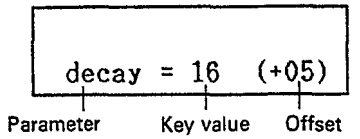
OPERATION

1. Select Job #02.
   The upper line of the LCD displays the previously selected key and its assigned voice.

```
KeyX :63-Cowbell
```

2. Select the desired Instrument key by tapping it.
3. The lower line of the LCD will show any one of the four parameters listed further below, its key value and offset to the basic Edit Voice value. Parameters are selected with numeric keys 1 through 4 according to the menu marked "*", printed immediately above numeric key 7.

Example:



The above display means that the decay value of 16 for the selected key is 5 units larger (+) than the basic Edit Voice value of 11. (An offset of 00 thus indicates that the key value is currently identical with the basic value.)

* Note that the Edit Voice value can only be offset up to its own minimum or maximum. Once this is reached, input of greater offsets will be ignored.

Offset Ranges:

1: PITCH Offset -600 ~ + 600 cents (in 10-cent steps)
2: LEVEL Offset -63 ~ +63
3: PAN Offset -14 ~ +14
4: DECAY Offset -30 ~ +30

See EDIT VOICE for details of the above parameters.

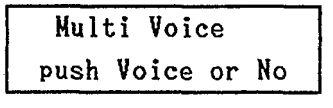
JOB #03: MULTI VOICE

FUNCTION To assign a single voice to the upper row of Instrument keys (A through L).

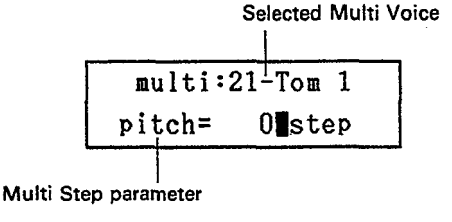
Multi Voice assignment makes all Instrument keys in the upper row produce the same voice, letting you create a special "keyboard" dedicated to a single voice for easier Pattern writing, etc.. Generally, it is meaningful only in conjunction with the next Job, Multi Step, or the preceding one, Parameter Assign. Both may be used to adjust the level, pitch, pan or decay for each upper row Instrument key.

OPERATION

1. Select Job #03.



2. You can now select the voice you wish to assign to keys A through L by tapping its Instrument key, or else turn the Multi Voice function off by pressing - 1/NO.
3. As soon as you assign a Multi Voice, the Multi Step mode is entered and the LCD shows a Multi Step display, such as:



The MULTI LED ⑧ lights up, and you can now continue immediately with Multi Step setting as described below.

JOB #04: MULTI STEP

FUNCTION To change the pitch, level, pan and/or decay of the Multi Voice for each upper-row Instrument key.

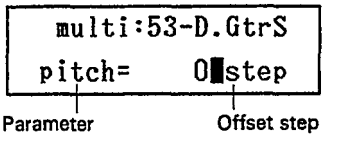
The Multi Step function can only be accessed if a Multi Voice is currently assigned to the top-row Instrument keys. (See previous Job #03.)

With Multi Step, the basic Edit Voice parameter values are offset in equal steps for each key from B to L (from left to right), with key A retaining the original Edit Voice value. For instance, if you choose pitch steps of +100 cents (= 1 semitone), each upper-row key will sound one semitone higher than the one to its left, starting from the original Edit Voice pitch of key A. This means you can then play melodic lines (and, depending on the Edit Voice poly number, even harmonies) on the upper row of instrument keys like on a keyboard.

OPERATION

1. If you have just used Job #03, Multi Voice, this Job will already be selected.

   Otherwise, select Job #04.



2. As with Parameter Assign explained above, the lower line of the LCD will show any one of the parameters pitch, level, pan or decay, along with its offset step per key.
   Parameters are again selected with numeric keys 1 through 4.
3. The offset step is adjusted with the - 1/NO and + 1/YES keys or DATA slider. The new value does not become effective until you press ENTER (= START key). Doing so momentarily displays the message "set!".

• Step Ranges

The step ranges given below are again offsets relative to the the Edit Voice value, which is always retained by key A. Similar to what was said for Parameter Assign, this value can only be offset up to its own minimum or maximum, and all further offsets are ignored.

In other words, depending on the current Edit Voice parameter values of the selected Multi Voice, certain Multi Step settings may cause minimum/maximum to be reached by one of the upper-row Instrument keys. All keys to the right of

that key will then sound the same, since they are "overstepping" the minimum/maximum Edit Voice value. If this happens, you may want to alter the respective Edit Voice parameter value.

1: PITCH Step -200 ~ +200 cents (in 10-cent steps), i.e. up to +/- 1 whole tone.
Setting positive values, e.g. +100 (= 1 semitone), creates a scale of notes that get higher towards the right, like on a piano. Negative values like -200 (= 1 whole tone) cause the notes to become lower towards Instrument key L (opposite of a normal keyboard).

2: LEVEL Step -10 ~ +10
Positive step values make upper Instrument keys sound louder towards the right, while negative step values lower the volume in that direction.

3: PAN Step -5 ~ +5
The further the Instrument key pressed is located towards the right, the more the pan position of the sound is moved towards the right channel (positive step values) or towards the left channel (negative step values).

4: DECAY Step -10 ~ +10
Positive step values make the Multi Voice decay shorter towards Instrument key L, while negative ones cause longer decay in that direction.

* Individual settings for all four parameters can be used simultaneously. Note, however, that you will no longer be able to check the Step value on the display once you switch parameters with the numeric keys. (After switching, the step is always displayed as "0", regardless of the actual setting.)

* Once you have made Multi Step settings and exited from this Job, further alterations of these values must be made by accessing this Job #04 directly and NOT by first selecting Job #03, Multi Voice. Doing so would erase all current Multi Step settings.

* Parameter Assign can be used instead of or in addition to Multi Step to alter the parameter values individually for each Instrument key.
As an example, this allows you to create any kind of personal "keyboard" with the keys A through L, for instance representing a major or minor scale.

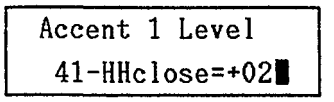
JOB #05: ACCENT LEVEL

FUNCTION Programming the volume changes achieved with ACCENT 1/2 for individual voices.

The green keys ACCENT 1 and ACCENT 2 are generally used to accentuate voices on certain beats by raising their level to a degree that can be programmed with this function. Negative values can also be set for interesting effects.

OPERATION

1. Select Job #05.



2. Select the voice whose Accent you wish to program with its Instrument key.
(All current Accent levels can be checked by pressing various Instrument keys in succession.)

3. To switch between Accent 1 and 2, press the corresponding ACCENT button.

4. Input the Accent value with the - 1/NO and + 1/YES keys or the DATA slider.

* The Accent values are again offsets which are added to or subtracted from the Edit Voice level. Though their theoretical range is from -63 to +63, Accents are also limited by the maximum/minimum voice level value. If a voice's level is already set to, say, 60 (i.e. 3 below the maximum level setting of 63), all Accent 2 values over 3 (i.e. from +3 to +63) give the same effect, namely of raising that voice's level to 63 when the ACCENT 2 is pressed.

JOB #06: FOOT SWITCH ASSIGN

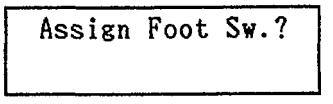
FUNCTION Assigns the function of any front panel key to a connected foot switch.

Applications for this function are entirely up to your imagination. You could assign the voice of a specific Instrument key, for instance the Bass Drum of key A, and "play" the BD with an optional foot switch. Or you could use the foot switch to add Accents, or assign it to + 1/YES to shift up a variety of settings, for example selecting the next Pattern to be played, etc., etc..

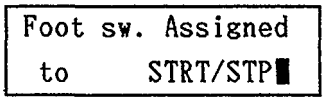
Default setting is START/STOP, with which a connected foot switch functions as a combination of the START and STOP/CONTINUE keys.

OPERATION

1. Select Job #06. The display will ask



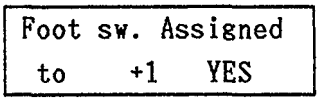
2. Press + 1/YES.
The display will show the function currently assigned to the foot switch.



3. Tap any key on the front panel whose function you would like to assign to the foot switch.

The name of the function/key will show on the LCD (if a key has several functions, only one is displayed). The cursor disappears, indicating that assignment is completed.

Example:

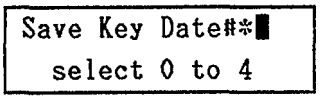


JOB #07: KEY DATA SAVE

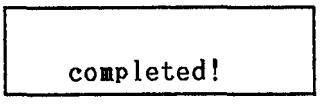
FUNCTION Saves the current Instrument key layout and other Key Assign settings to the internal memory of the RX7.

OPERATION

1. Select Job #07. The display will show



2. You can now choose to which Key Data number from 1 to 4 you want to save the current Instrument key assignment (layout) data.
   Hit the respective numeric key and then press + 1/YES.
3. The message



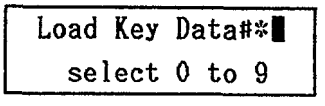
will appear, showing that the layout data has been saved to the specified number.

JOB #08: KEY DATA LOAD

FUNCTION Loads Key Data (voice layouts etc.) to the Instrument keys.

OPERATION

1. Select Job #08. The display will show



2. Input the desired Key Data parameter number with the respective numeric key and and press + 1/YES.

* Data numbers 1 through 4 correspond to the Key Data saved with Job #07, while numbers 5 through 9 call up layouts that are permanently stored in the RX7 memory.

3. The message

shows that the Key Data has been loaded.

* If + 1/YES is pressed again, the Instrument keys are reset to the voices prior to Key Data load.

OVERVIEW

The variety of applications for these functions is enormous, letting you use the RX7 as a state-of-the-art MIDI sound source and controller. For examples, they allow you to:

* Play any or all RX7 voices from up to 16 external keyboards and/or sequencers by assigning MIDI note numbers to each RX7 instrument and MIDI channels to as many as 16 of them.
* Use single RX7 voices as sound sources for external keyboards or sequencers, allowing you e.g. to play scales and chords with these voices from synthesizer keyboards.
* Instantly and remotely select up to 16 different RX7 voices for playing from an external keyboard simply by switching MIDI channels.
* Use a synthesizer's pitch bend wheel to control pitch bend effects for RX7 voices.
* Play external MIDI sources from the RX7 Instrument keys according MIDI note data output by the RX7 on up to 16 MIDI channels.
* Use the RX7 as a sequencer.
* Transmit or receive bulk data.

To be able to make full use of the information given in this section, you will have to have a basic understanding of the MIDI standard. A guide called "The MIDI Book" is available from your Yamaha dealer. Consult this or other publications for more details on MIDI.

The rear panel MIDI IN ⑤ terminal must be connected to the external device's MIDI OUT for external MIDI control of the RX7. If you want to control other MIDI equipment from the RX7, connect MIDI OUT ④ to the other device's MIDI IN terminal.

To use the MIDI functions, press MIDI. The upper line of the LCD will display

```
MIDI Information
```

JOB #01: CHANNEL MESSAGE

FUNCTION Enables or disables reception/transmission of MIDI Channel Messages.

Unless this function is ON, no communication is possible between the RX7 and connected MIDI devices (i.e. the RX7 can neither control, nor be controlled by, external MIDI equipment).

* Even if this function is ON, communication is not possible unless the RX7 MIDI channels and those of the connected devices are set to match. (See Jobs #02 and #03 below.)

OPERATION

1. Making sure that "MIDI Information" is displayed, select Job #01.
   The lower line of the display will show whether MIDI Channel Message transmission/reception is currently possible or not.

```
Ch Message  on
```

2. Switch this function on or off using the - 1/NO and + 1/YES keys or the DATA slider.

JOB #02: RECEIVE CHANNEL

FUNCTION Allows selection of channels for MIDI data reception and the type of note number control for that channel.

With this function, any individual MIDI channel can be turned on or off for reception.

In addition, you can specify the type of note number control for each channel:

Pitch assignment (p)....."p" indicates that note numbers received on this MIDI channel control the pitch of the RX7 voice assigned to that channel. In other

words, that single voice can then be played with varying pitch by an external keyboard or sequencer.

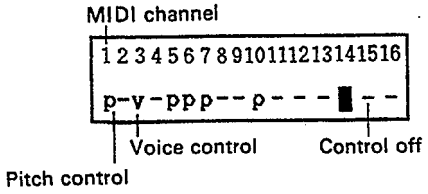
Voice assignment (v)……."v" indicates that note numbers received on this MIDI channel control the individual RX7 voices according to their note number assignment. A keyboard, for instance, can be used to play a different RX7 voice from each key.

* Any or all channels can be set to "p" for pitch control, but only one channel can be used for voice control "v".

How to assign MIDI channels and note numbers to voices is explained under Job #04, Note Number Assignment.

OPERATION

1. Making sure that "MIDI Information" is displayed, select Job #02.
   The LCD will show the following type of display:



2. Using the -1/NO and +1/YES keys to move the cursor between channels, select the type of note number control as follows:

"v" …… Repeatedly pressing numeric key 1 switches the respective channel between "v" and OFF ("-").

"p"……..Repeatedly pressing numeric key 2 switches the respective channel between "p" and OFF ("-").

* Attempting to specify "v" for more than one channel turns data reception off ("-") for the previously selected "v"-channel.

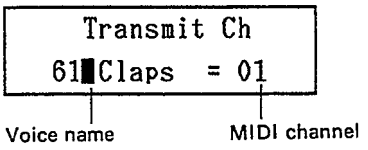
JOB #03: TRANSMIT CHANNEL

FUNCTION Selection of channels for MIDI data transmission according to voice.

This function lets you specify a MIDI transmission channel for each individual RX7 voice. During data transmission from the RX7 to other MIDI equipment, the note number assigned to that voice with Job #04 will be output on the selected MIDI channel. This allows you to use the RX7 as a sequencer.

OPERATION

1. Select Job #03.
   The LCD will show



2. Using the -1/NO and +1/YES keys and DATA slider. input the desired voice names and their MIDI channel. (Voices can also be selected by entering their number directly with the numeric keys.)
   Move the cursor between voice and channel parameters with ACCENT 2.

JOB #04: NOTE NUMBER ASSIGN

FUNCTION 1. Assign a MIDI note number to each RX7 voice.
2. Assign a RX7 voice to each MIDI reception channel.

Each RX7 voice can be assigned a certain MIDI note number. When this note number is received, the corresponding voice (or voices, if the same note number is assigned to several) will sound. These settings determine which keys of external MIDI keyboards will play which RX7 voices on the MIDI channel set to "v" with Job #02.

By the same token, playing a voice on the RX7 will transmit the corresponding MIDI note number to other MIDI equipment on the channel set for that voice with Job #03. This lets you control external MIDI equipment from the RX7 as with a sequencer (if all other settings are correct).

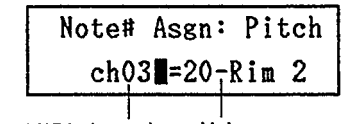
In addition, each MIDI reception channel can be assigned a single RX7 voice, allowing you to control the pitch of that voice from an external MIDI keyboard or sequencer. Switching MIDI transmission channels on a connected synthesizer would then allow you to select the corresponding RX7 voice as a sound source (if that channel is set to "p" with Job #02).

* Also read the information concerning Jobs #02 and #03.

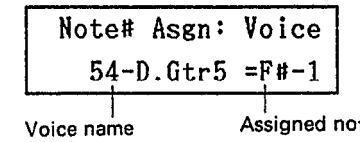
OPERATION

1. Select Job #04.

The display will show either



or



2. To switch between the two types of displays. “Note number assign to voice” or “Note number assign to pitch”, use numeric key 1 (Voice) or 2 (Pitch).
ACCENT 2 switches cursor between the two displayed parameters.

a. Voice
To select voices and assigned notes, use the -1/NO and +1/YES keys and DATA slider.

* The note range is from C-2 to G8 (= MIDI note number 0 to 127)

b. Pitch
To select MIDI channels and assign voices, use the -1/NO and +1/YES keys and DATA slider.

* Pitch control of the assigned voices is possible over the 5-octave range from C1 to C6 (Center C = C4).

* Voices can only be assigned to channels that have been set to “p” with Job #02. If a channel is OFF or set to “v”, the following display will appear, showing that assignment is not possible.

To assign a voice to such a channel, first set it to “p” with Job #02.

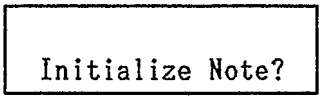
JOB #05: NOTE INITIALIZE

FUNCTION Resets the MIDI note numbers of all voices to their initial values.

Use this function to restore the original (factory- programmed) note number assignments to each voice.

OPERATION

1. Select Job #05.
The display will ask



2. Press +1/YES to restore the original note numbers.

JOB #06: PITCH BEND RANGE

FUNCTION Sets the MIDI pitch bend range for each voice.

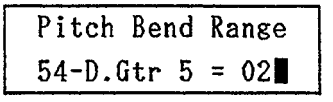
The RX7 is capable of receiving MIDI pitch bend messages, allowing pitch bend control of all voices from external MIDI equipment.

To enable pitch bend control of a voice, its pitch bend range must be set to at least 01.

* The RX7 can not memorize this kind of MIDI pitch bend data as a sequence data. This function is provided to enhance the RX7's usefulness as a MIDI sound source controlled e.g. by a sequence recorder.

OPERATION

1. Select Job #06.



2. Using the -1/NO and +1/YES keys and DATA slider, input the desired voice names and their Pitch Bend Range. (Voices can also be selected by entering their number directly with the numeric keys.)
Move the cursor between voice and Pitch Bend Parameter with ACCENT 2.

- Range: 0 to 12 (units: 1 semitone)
Setting this value to 02 means you can bend the pitch over a range of one whole tone, setting it to 12 gives you an octave of pitch bend range.

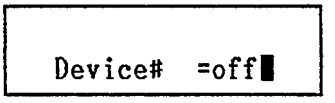
JOB #07: DEVICE NUMBER

FUNCTION Set the RX7 to receive/transmit System Exclusive data on a specified MIDI channel.

When receiving or transmitting System Exclusive data (such as bulk data) from/to other Yamaha equipment, the “device number” (= MIDI channel number) must be the same on both MIDI devices.

OPERATION

1. Select Job #07.



2. Use the -1/NO and +1/YES keys or DATA slider to enable System Exclusive communication and select the MIDI channel (device number).

JOB #08: BULK REQUEST

FUNCTION Send a bulk dump request to other MIDI equipment.

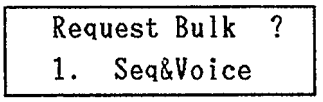
When you want the RX7 to receive bulk data from another RX7, a Yamaha sequence recorder or other appropriate device, the RX7 must send a request for bulk data transmission to that device.

The device number (see Job #07) has to be the same on both pieces of equipment.

* Reception of bulk data will erase the corresponding data in the RX7.

OPERATION

1. Select Job #08.
   The display will ask



2. You can now select the type of bulk data you wish to receive from among the following with the -1/NO and +1/YES keys.

   1. Seq&Voice
   2. Pattern 00 (single Pattern)
   3. Voice 00 (single Voice)
   4. Setup

3. (If you select data type 2. or 3., you must also enter the Pattern or Voice number using the numeric keys.)

4. Transmit a dump request to the connected MIDI device by pressing ENTER.

* If the device number has been set to OFF with Job #07, the error message

will appear. Set the correct device number and repeat the bulk dump request.

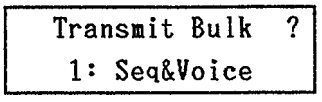
JOB #09: BULK TRANSMIT

FUNCTION Transmit bulk data to other MIDI equipment.

To be able to use this function, the external MIDI device must be set to receive bulk data. Make sure that the same device number is selected on both the RX7 and the other MIDI device.

OPERATION

1. Select Job #09.
   The display will ask

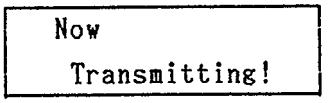


2. You can now select the type of bulk data you wish to transmit from among the following with the -1/NO and +l/YES keys.

   1. Seq&Voice
   2. Pattern 00 (single Pattern)
   3. Voice 00 (single Voice)
   4. Setup

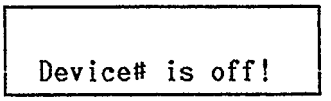
3. (If you select data type 2. or 3., you must also enter the Pattern or Voice number using the numeric keys.)

4. Transmit the selected bulk data to the connected MIDI device by pressing ENTER. During data transmission, the LCD will show



If transmission has been successful, the LCD will revert to the previous display.

* If the device number has been set to OFF with Job #07, the error message



will appear. Set the correct device number and repeat bulk transmission.

* Except during playback, recording (writing) or execution of cassette/cartridge jobs, the RX7 will respond to a dump request from a connected MIDI device by transmitting bulk data if the device number has been set accordingly.

SYNC

OVERVIEW

Sync (short for synchronization) is used to control the Clock rate (playback/recording speed) and Start/Stop functions via external MIDI devices or MTRs (multi-track tape recorders).

Normally, the RX7 Clock is set to Internal, meaning that playback and recording (Real Time Write) speed are controlled by the RX7's Internal Clock, whose speed can be adjusted with the Tempo functions.

With Sync set to Internal, you can also use the RX7 to control the Clock rate of external MIDI devices such as sequencers or other drum machines from the RX7 MIDI OUT terminal.

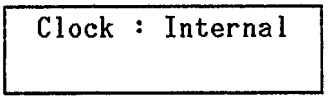
When Sync is set to MIDI, the RX7 Clock rate is controlled by the MIDI signal received at the MIDI IN terminal from other MIDI equipment. Start/Stop and Tempo then depend on the external “master” device, with the RX7 acting as “slave”.

By using the optional Yamaha MIDI Converter YMC10 (which converts MIDI sync signals to tape sync signals (FSK) and vice versa), FSK signals can be recorded onto tape from the RX7 via its MIDI OUT terminal to synchronize a tape recording to the RX7’s Internal Clock. By the same token, playback of taped FSK signals can be used to control RX7 Tempo and Start/Stop functions via MIDI IN.

* Whenever the RX7 is set for control by external MIDI signals, the MIDI SYNC LED⑦will light up.

OPERATION

1. Press SYNC.



2. Use the -1/NO and +1/YES keys to switch between Internal and MIDI synchronization.

OVERVIEW

The UTILITY KEY accesses a number of different functions which let you

* Display remaining Pattern and Song memory.
* Turn Memory Protection on and off.
* Change voices in existing Patterns.
* Clear all Songs or Patterns.
* Load internal ROM demonstration data.

JOB #01: REMAINING PATTERN MEMORY

FUNCTION Displays remaining Pattern memory in %.

OPERATION Select Job #01.

JOB #02: REMAINING SONG MEMORY

FUNCTION Displays remaining Song memory in %.

OPERATION Select Job #02.

JOB #03: MEMORY PROTECT

FUNCTION Turns Memory Protection on or off. Unless editing data, leave Memory Protection on to avoid inadvertent erasure of previous settings.

OPERATION

1. Select Job #03.
2. Turn Memory Protect off with -1/NO and on with +1/YES.

JOB #04: VOICE CHANGE

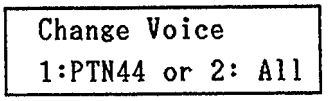
FUNCTION Exchanges voices in one or all Patterns.

This is a very helpful function when you want to try out different voice combinations for Patterns after having programmed them.

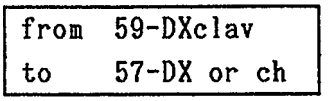
* If you only want to change voices in a single Pattern, it must be selected before using this Job.

OPERATION

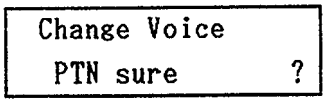
1. Select Job #04.
   The display will ask:



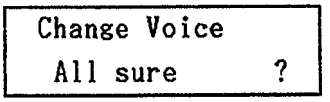
2. Input your choice of single or all Patterns with numeric key 1 or 2.



3. Switching between the upper and lower display line with ACCENT 2, select the instruments you want to exchange with the numeric keys or -1/NO and +1/YES.
4. Press ENTER.



or



5. Confirm by pressing +1/YES.

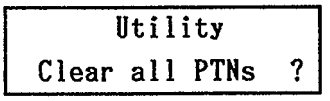
* Memory Protection must be off for this function.

JOB #05: ALL PATTERNS CLEAR

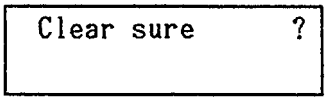
FUNCTION Erases all Patterns from the RX7 memory.

OPERATION

1. Select Job #05.



2. Press +l/YES.



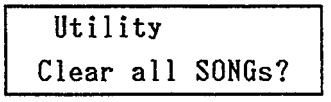
3. Confirm by pressing +1/YES again.

JOB #06: ALL SONGS CLEAR

FUNCTION Erases all Songs and Chains from the RX7 memory.

OPERATION

1. Select Job #06.



2. Press +1/YES. Confirm by pressing +1/YES again.

JOB #07: DEMO DATA LOAD

FUNCTION Load demonstration Songs.

A total of eight demonstration Songs (in three groups) are permanently stored in the internal ROM. (You have already heard the two contained in demo group #l.) The Songs in group three consist of popular rock, 16-beat and latin percussion patterns which you can use for your own arrangements.

NOTE: Loading demo Songs will erase all present Patterns and Songs. Therefore, make sure your own Patterns and Songs are saved before loading.

List of Demonstration Songs:

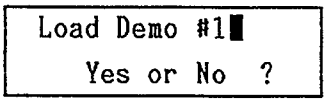
Demo #l
- SONG00: GET FUNK
- SONG01: TROPICAL

Demo #2
- SONG00: DOO WAP
- SONG01: NOISE
- SONG02: ROCK

Demo #3
- SONG00: ROCK
- SONG01: 16 BEAT
- SONG02: LATIN

OPERATION

1. Select Job #07.



2. Select the desired demonstration Song group with numeric key 1, 2 or 3.
3. Press +1/YES. Confirm by pressing +1/YES again.

CASSETTE/CARTRIDGE

OVERVIEW

The Cassette/Cartridge Mode lets you

* Save sequence (Pattern/Song/Chain), voice and setup (cassette only) data to an optional Yamaha RAM4 Data Cartridge or a standard cassette tape.
* Verify that the data has been saved correctly.
* Load such data to the RX7.
* Format a data cartridge (cartridge only).

Besides the cartridge Format Job #30, the Cassette/Cartridge Mode has 15 Jobs in 3 groups (Save, Load and Verify) of 5 Jobs each. The Jobs are numbered so that their first digit indicates Save (0), Load (1) or Verify (2), and their second digit the kind of data to be handled.

TABLE OF CASSETTE/CARTRIDGE JOBS

DATA TYPE

	ALL* SEQUENCE** AND VOICE DATA	ALL SEQUENCE DATA	SINGLE PATTERN	ALL VOICE DATA	SETUP DATA***
SAVE	#01	#02	#03	#04	#05
LOAD	#11	#12	#13	#14	#15
VERIFY	#21	#22	#23	#24	#25
FORMAT	#30 (Format new RAM 4 cartridges for use in RX7.)				

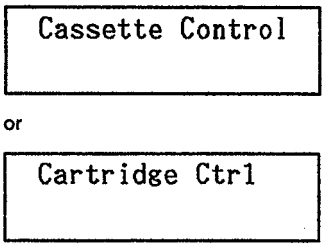
* "All" means the entire data currently stored in the RX7 memory, i.e. sequence data for up to 100 Patterns, 20 Songs and 3 Chains and/or all current voice data.

** "Sequence" refers to Patterns + Songs + Chains.

*** Cassette only.

Press CASSETTE/CARTRIDGE to enter this mode. The same key also switches between Cassette and Cartridge operations.

Cassette and Cartridge operations are basically the same and will be discussed here together. They are distinguished on the LCD by a different upper line:



CARTRIDGES

When using a RAM4 cartridge, make sure it is inserted firmly into the CARTRIDGE slot⑫ on the rear panel, with the list of contents facing upward. If you are saving data, the cartridge MEMORY PROTECT switch must be set to OFF. After saving, set this switch to ON in order to protect the cartridge contents from accidental erasure.

Before you can use a new RAM cartridge, it must be formatted. Refer to Job #30 at the end of this section.

CASSETTES

Before using Cassette Control, make sure that the RX7 is correctly connected to a cassette deck with the supplied cassette cable. Insert the 8-pin DIN-plug into the RX7 CASSETTE jack ⑥, connect the red cable to the deck's microphone input and the white cable to its headphone output.

Keep recording and playback levels high to minimize tape hiss.

* Save Operations
  Before saving data, insert a blank cassette into the cassette recorder. The cassette deck must be set for recording and started before executing the Save command on the RX7 with the +1/YES key.

* Load and Verify Operations
For Load and Verify operations, make sure the required data cassette is inserted into the deck and rewound to the beginning of the recorded data. Playback must be started prior to RX7 command execution. The upper left-hand part of the LCD will begin to blink as soon as the header (beginning of data on cassette) is found.

* Interrupt
Pressing STOP/CONTINUE during a Cassette Save, Load or Verify operation interrupts it and displays

```
..... break !
```

It is recommended to Verify data after saving, particularly in the case of cassettes, to make sure that it has been memorized properly. (The Verify function compares the saved data with the original data.)

JOBS #01 - #05: SAVE DATA

FUNCTION Saves various kinds of data onto cartridge/cassette.

Refer to the CASSETTE/CARTRIDGE Menu on the RX7 front panel and the TABLE OF CASSETTE/CARTRIDGE JOBS above to determine the appropriate Job number for the type of data to be saved.

Since saving single Patterns to a cartridge or cassette (Job #03) necessitates slightly different procedures, these are explained separately below.

* When you perform a Save operation for any kind of data except single Patterns to a cartridge already containing that kind of data, the previous data will be erased.

* Setup data, which can be saved on cassette only, includes the following data:
  * The 5 sets of Key Data currently stored in the RX7
  * The accent levels of all voices
  * The MIDI transmit/receive channels, note numbers and pitch bend ranges of all voices.

GENERAL SAVE OPERATION

1. Select the desired Job #01, #02, #04 or #05.
The display will ask you to confirm your choice of data type.

```
Save  Voice   ?
```

2. Press +1/YES if you want to save the displayed data.
The LCD will ask for confirmation:

```
Save  Sure ?
```

3. Press +1/YES again to confirm.
The display will show

```
Save   executing
```

then

```
Save   completed
```

indicating that the data has been saved.

* It is now a good idea to verify.

SAVING SINGLE PATTERNS TO A CARTRIDGE

1. Select Job #03 in Cartridge Mode.
The display will ask you to confirm:

```
Save PTN ?
```

2. Press +1/YES. The display will change to

```
PTN 22 -> Crt **
```

Pattern number — Cartridge destination

3. You can now specify the number of the Pattern to be saved as well as the desired destination in the RAM cartridge.
(Use ACCENT 2 to switch between them.)

* If the specified cartridge destination already contains data, it will be erased by when you execute Save.

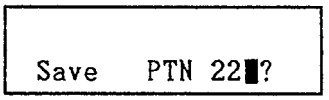
4. Press +1/YES.
The LCD will ask you to confirm.

```
Save   sure?
```

5. Press +1/YES again.
The display will show “executing”, then “completed”.

SAVING SINGLE PATTERNS TO A CASSETTE

1. Select Job #03 in Cassette Mode.
The display will ask you to input the PTN number.



2. Enter the Pattern number directly with the numeric keys.
3. Press +1/YES. The display will show "executing", then "completed".

JOBS #11 - #15: LOAD DATA

FUNCTION Loads various kinds of data from a cartridge or cassette.

Refer to the CASSETTE/CARTRIDGE Menu on the RX7 front panel and the TABLE OF CASSETTE/CARTRIDGE JOBS above to determine the appropriate Job number for the type of data to be loaded.

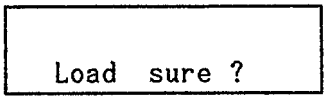
Since loading single Patterns from a cartridge or cassette (Job #13) necessitates slightly different procedures, these are explained separately below.

The Load operations correspond to the Save operations explained above.

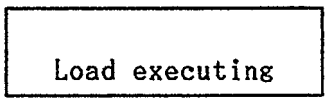
GENERAL LOAD OPERATION

1. Select the desired Job #11, #12, #14 or #15.
   The display will ask you to confirm your choice of data type.

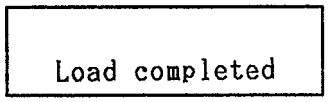
2. Press +1/YES if you want to load the displayed data.
   The LCD will ask for confirmation:



3. Press +1/YES again to confirm.
   The display will show



then

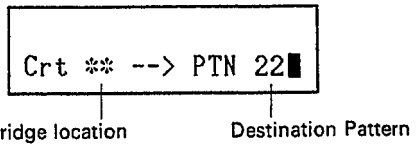


indicating that the data has been loaded to the RX7.

LOADING SINGLE PATTERNS FROM A CARTRIDGE

1. Select Job #13 in Cartridge Mode.
   The display will ask you to confirm:

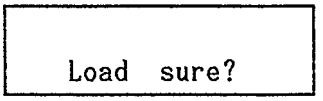
2. Press +1/YES. The display will change to



3. You can now specify the cartridge location you wish to load from as well as the Pattern number you want to load it to. (Use ACCENT 2 to switch between them.)

* If the specified Pattern number already contains data, it will be erased when you execute Load.

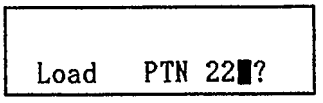
4. Press +1/YES.
   The LCD will ask you to confirm.



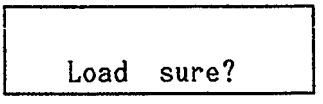
5. Press +1/YES again.
   The display will show "executing", then "completed".

LOADING SINGLE PATTERNS FROM A CASSETTE

1. First select the Pattern location you wish to load cassette data to (in Pattern Select mode).
2. Select Job #13 in Cassette Mode.
   The display will ask you to input the PTN number.



3. Enter the Pattern number directly with the numeric keys, then press +1/YES. The display will ask you to confirm:



4. Press +1/YES again. The display will show "executing", then "completed".

JOBS #21 - #25: VERIFY DATA

FUNCTION Verifies whether data has been saved correctly to a cartridge or cassette.

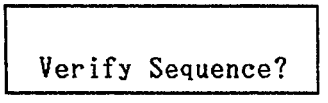
Refer to the CASSETTE/CARTRIDGE Menu on the RX7 front panel and the TABLE OF CASSETTE/CARTRIDGE JOBS above to determine the appropriate Job number for the type of data to be verified.

The operations for verifying single Patterns saved to a cartridge or cassette (Job #13) are slightly different and therefore explained separately below.

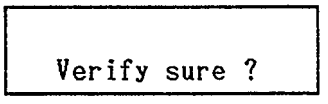
The Verify operations are exactly complementary to the Save operations explained above.

GENERAL VERIFY OPERATION

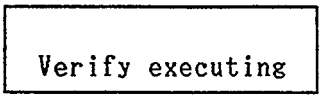
1. Select the desired Job #21, #22, #24 or #25.
   The display will ask you to confirm your choice of data type.



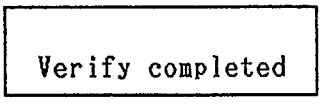
2. Press +1/YES if you want to verify the displayed data.
   The LCD will ask for confirmation:



3. Press +1/YES again to confirm.
   The display will show



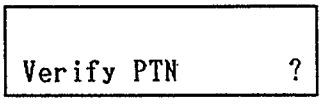
   then



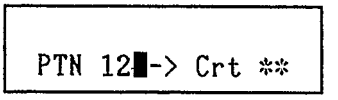
   indicating that the data has been verified.

VERIFYING SINGLE PATTERNS SAVED TO A CARTRIDGE

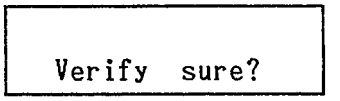
1. Select Job #23 in Cartridge Mode.
   The display will ask you to confirm:



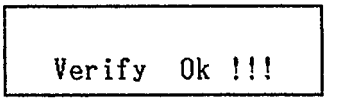
2. Press +1/YES. The display will change to



3. You can now specify the Pattern number and cartridge location you want to verify. (Use ACCENT 2 to switch between them.)
4. Press +1/YES.
   The LCD will ask you to confirm.



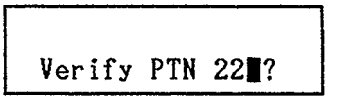
5. Press +1/YES again.
   If the data has been saved properly, the display will show



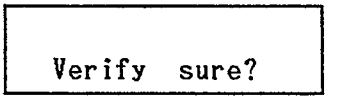
* If data has not been saved correctly, an error message will appear instead. Refer to the section ERROR MESSAGES.

VERIFYING SINGLE PATTERNS SAVED TO A CASSETTE

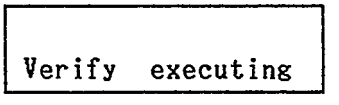
1. Select Job #23 in Cassette Mode.
   The display will ask you to input the PTN number.



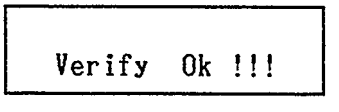
2. Enter the Pattern number directly with the numeric keys, then press +1/YES. The display will ask you to confirm:



3. Press +1/YES again. The display will show



   After verification, the display will show the following message if the data has been saved properly:



* If data has not been saved correctly, an error message will appear instead. Refer to the section ERROR MESSAGES.

JOB #30: FORMAT CARTRIDGE

FUNCTION Formats a RAM4 Data Cartridge for use with the RX7.

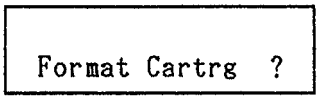
Any new RAM4 Data Cartridge (or one that has been previously used with other equipment) has to be formatted with this Job before it can used with the RX7.

Make sure that the cartridge is inserted correctly, with the MEMORY PROTECT switch set to OFF.

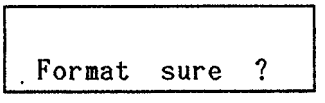
* Formatting a cartridge which already contains data will completely erase all such data.

OPERATION

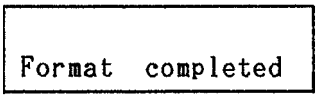
1. In Cartridge Control mode, select Job #30.
   The display will ask



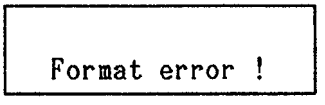
2. Press +1/YES.
   The display will ask you to confirm:



3. If you are, press +1/YES again.
   After "executing", the LCD will display



* If formatting was not carried out successfully, the message



will appear. In this case, repeat formatting.

ERROR MESSAGES

You have probably already encountered some of the error messages mentioned in preceding sections. In general, the RX7 will display an error message if:

* An operating mistake has been made.

* Memory or other limits have been reached.

* Malfunctions have occurred (due to faulty connections, etc.)

Error messages always appear on the lower line of the LCD. The following list is for your reference.

GENERAL ERROR MESSAGES

MESSAGE	CAUSE	REMEDY
checksum error !	During a Receive Bulk operation (MIDI JOB #09), there was a break in transmission, due to faulty cable or electrical interference.	Check that the MIDI cable is not faulty, and repeat the operation. Also read the PRECAUTIONS section of this manual for advice on electrical interference.
illegal input!	Using the Part Copy function (Edit Song Mode) you entered a part number that does not appear in the Song, or the second Part number you entered was lower than the first Part number.	Enter correct Part numbers.
memory full!!	The sequence memory (Pattern, Song or Chain) is full.	Save the data presently in the RX7 to cartridge or cassette, and clear (erase) data to make room in the memory. Patterns, Songs and Chains can be cleared individually, or you can clear all Patterns or all Songs (UTILITY MODE JOBS #05 and #06 respectively).
Memory Protected	You have tried to clear or rewrite voice or sequence data (by entering or loading new data) and the Memory Protect function is turned on.	Turn the RX7's Memory Protect OFF using UTILITY JOB #03. Then carry out the data operation again.
MIDI BUFFER FULL	The RX7's MIDI Buffer is full, because too much data has been sent too rapidly from an external device. The MIDI Buffer is a kind of "waiting room" for MIDI data, where data is held for minute periods of time (of the order of .0003 seconds for one Byte) while it is being processed by the RX7.	Press any key to clear the LCD. Send less dense data, or send at a slower tempo.
MIDI DATA ERROR!	You have turned on power to a connected MIDI device, which sends a non-standard signal to the RX7. Technically, this is called a "framing" error or an "overrun" error.	Press any key to clear the LCD, and continue normal operation.
no data!	You have tried to use the Edit Pattern function to edit a Pattern that does not contain data.	
not found!	1. You have used the Search Mark function and entered the name of a Mark that has not been set in the Song. 2. You have used the Search Part or Copy Part function and entered a Part number that is higher than the total number of Parts in the Song.	1. Enter the correct Mark name. 2. Enter the correct Part number.
too large PART!	1. You have tried to insert a Part in a Song that already contains 999 Parts. 2. You are trying to use the Copy Part function with the result that the new Song will have more than 999 Parts.	Edit two or more Songs, each of which forms a section of the long Song you were trying to create. Then use the Chain Edit Mode to combine these Songs into a continuous sequence.

MESSAGE	CAUSE	REMEDY
too large PTN!	1. A Pattern contains the maximum amount of data, and you are trying to write more data into it. 2. You are trying to append a Pattern to another Pattern, and the two Patterns combined contain more than the maximum amount of data.	Write two or more shorter Patterns, each of which forms a section of the long Pattern you were trying to create. Then use the Edit Song Mode to combine these Patterns into a continuous sequence.
wrong signature!	1. You have tried to append two Patterns which have different time signatures. 2. You have tried to append two Patterns which, when combined, total more than 100 bars in length.	1. Write a new Pattern which will have a time signature equivalent to the two original Patterns combined. For example, if you had wanted to append a 4/4 Pattern with a 3/4 Pattern, write a new 7/4 Pattern (3/4 + 4/4 = 7/4). 2. Rewrite the same two Patterns using longer bars, then append them. For example, if the two Patterns each contained 52 bars of 4/4 time (total 104 bars), rewrite them as Patterns containing 26 bars of 8/4 time (total 52 bars), which can then be appended.

CARTRIDGE MODE ERROR MESSAGES

MESSAGE	CAUSE	REMEDY
Cartrg not ready	You have entered the Cartridge Mode, but you have not inserted a RAM4 Cartridge into the RX7.	Insert a RAM4 Cartridge, then enter the Cartridge Mode again.
Cartrg other type	You have entered the Cartridge Mode, but the RX7's Sequence Data Cartridge slot contains the wrong type of cartridge.	Remove the wrong cartridge, then insert a RAM4 Cartridge, then enter the Cartridge Mode again.
Cartrg protected	You have tried to save data, or execute the Format operation, with the Memory Protect turned ON on your RAM4 Cartridge.	Remove the RAM4 Cartridge and turn its Memory Protect OFF by flicking the switch on the underside of the cartridge. Then insert the cartridge and enter the required Job number once more.
Format conflict!	You have entered the Cartridge Mode, but the RX7's Sequence Data Cartridge slot contains a cartridge with a different format.	1. Remove the cartridge and insert a RAM4 cartridge that has been formatted for use with the RX7. 2. Remove the cartridge and insert a RAM4 Cartridge that has not been formatted, then enter the Cartridge and execute the Format operation (JOB #30). 3. If the data contained in the cartridge is not needed, make sure its Memory Protect is OFF, and format it for use with the RX7. (CARTRIDGE JOB #30).
no data!	You have tried to save, load or verify a Pattern containing no data.	
Verify error!	You have tried to verify cartridge data, but the RX7 contains different data than that contained in the RAM4 cartridge.	1. Save the data again, then execute the Verify operation once more. 2. In the case of verifying a single Pattern, execute the verify operation again, making sure you have entered the correct Pattern numbers.
Format error!	Formatting was not successful.	Repeat formatting

CASSETTE MODE ERROR MESSAGES

MESSAGE	CAUSE	REMEDY
data error	You have tried to verify cassette data. The type of data is correct (e.g., Single Pattern data) but the RX7 contains different data to that contained on the cassette.	Save the data again, then execute the Verify operation once more.
Sum error	There is a checksum data error in data that you have tried to verify or load from cassette.	Repeat the Load or Verify operation, making sure that the playback level is high. Also, check that the connections between the RX7 and the cassette recorder are correctly made, with cables that are functioning properly. If necessary, clean and demagnetize the tape heads.
type error	You have tried to load or verify data from cassette, using an incorrect Job number. For example, you used the Load Single Pattern operation (Job #13) when trying to load Voice data.	EITHER: Use the correct Job number. OR: Use the correct cassette data.

SPECIFICATIONS

SOUND SOURCE

- PCM sampled sounds, 12-bit resolution, 100 voices
- Maximum polyphonic number: 8~16

MEM0RY CAPACITY

- 100 Patterns (Max. length: 99 measures)
- 20 Songs (Max. length: 999 parts)
- 3 Chains (Max. length: 90 steps)
- 10 Sets of Key Data (incl. 5 user-programmable sets)

CONTROLLERS

- SLIDERS: Master Volume, Click Volume, Tempo, Data Entry
- BUTTONS: Accent 1, Accent 2, Stop/Continue/Shift/Compare, Start/Enter, Instrument Keys A through X (24)
- KEYS: PATTERN AND SONG OPERATION KEYS (Pattern/Song, Real Time Write/Song Edit, Step Write/Insert, Quantize/Delete, Swing/Repeat, Click/Tempo Change, Pattern Edit/Volume Chagne, Clear, Copy), Effect, Damp, Tempo, MODE AND JOB KEYS (Voice Edit, Key Assign, Chain, Cassette/Cartridge, Sync, MIDI, Utility, Job), Numeric Key Panel, -1/NO, +1/YES

DISPLAY

- LCD: 16 Characters x 2 Lines
- LEDs: Pattern, Song, MIDI, Sync, Multi, Effect, Damp, Run

CONNECTIONS

- AUDIO OUTPUTS: Phones, Left/Mono, Right, Click
- MIDI: In, Out, Thru
- INTERFACE: Cassette (In/Out, DIN connector), Data Cartridge port
- CONTROL: Foot Switch
- POWER: DC 12V In

DIMENSIONS (W x D x H)

- 439 x 270 x 78 mm(17 1/4" x 10 5/8" x 3")

WEIGHT

- 2.95 kg. (6 1/2 Ibs.)

POWER REQUIREMENTS (WITH PA-1210 12 V VOLTAGE CONVERTOR)

- U.S. and Canadian model: 120 V, 50/60 Hz
- European model: 220-240 V, 50 Hz

* Specifications are subject to change without notice.

[Digital Rythm Programmer]
Model RX7 MIDI Implementation Chart

Date : 9/18, 1987
Version : 1.0

Function . . .		Transmitted	Recognized	Remarks
Basic Channel	Default	1 - 16	1 - 16	memorized
	Changed	1 - 16	1 - 16	
Mode	Default	3	3	
	Messages	x	x	
	Altered	**********	x	
Note Number		0 - 127	0-127/36-96	*1
	True voice	**********	x	
Velocity	Note ON	o 9nH,v=1-127	o v=1-127	
	Note OFF	x 9nH,v=0	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bender		x	o	Note# asgn:pitch
Control Change	10	x	o	Pan Note# asgn:pitch
Prog Change	True #	x **********	o	Note# asgn:pitch
System Exclusive		o	o	
System Common	Song Pos	x	o	
	Song Sel	o 0 - 19	o 0 - 19	
	Tune	x	x	
System Real Time	Clock	o	o	
	Commands	o	o	
Aux Mes- sages	Local ON/OFF	x	x	
	All Notes OFF	x	x	
	Active Sense	o	o	
	Reset	x	x	

Notes: *1 = When Note number assign switch is set to VOICE, each voice sounds by each note. (Note # range : 0 - 127)
When Note number assign switch is set to PITCH, each voice sounds by each channel. (Note # range : 36 - 96)

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No

RX7 "DRUM SET" CHART

Write voice names on the corresponding instrument keys

A	B	C	D	E	F	G	H	I	J	K	L
M	N	O	P	Q	R	S	T	U	V	W	X

PAN POSITIONS L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R L.....,.....R

PAN VALUE _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

		KEY	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
VOICE EDIT	JOB #02	PITCH																								
	JOB #03	DECAY																								
	JOB #04	BEND																								
	JOB #05	VOICE LEVEL																								
	JOB #06	PAN																								
KEY ASSIGN	JOB #02	PITCH MULTI STEP																								
	write offset values OR combined values	LEVEL MULTI STEP																								
	MULTIVOICE NAME	PAN MULTI STEP																								
		DECAY MULTI STEP																								

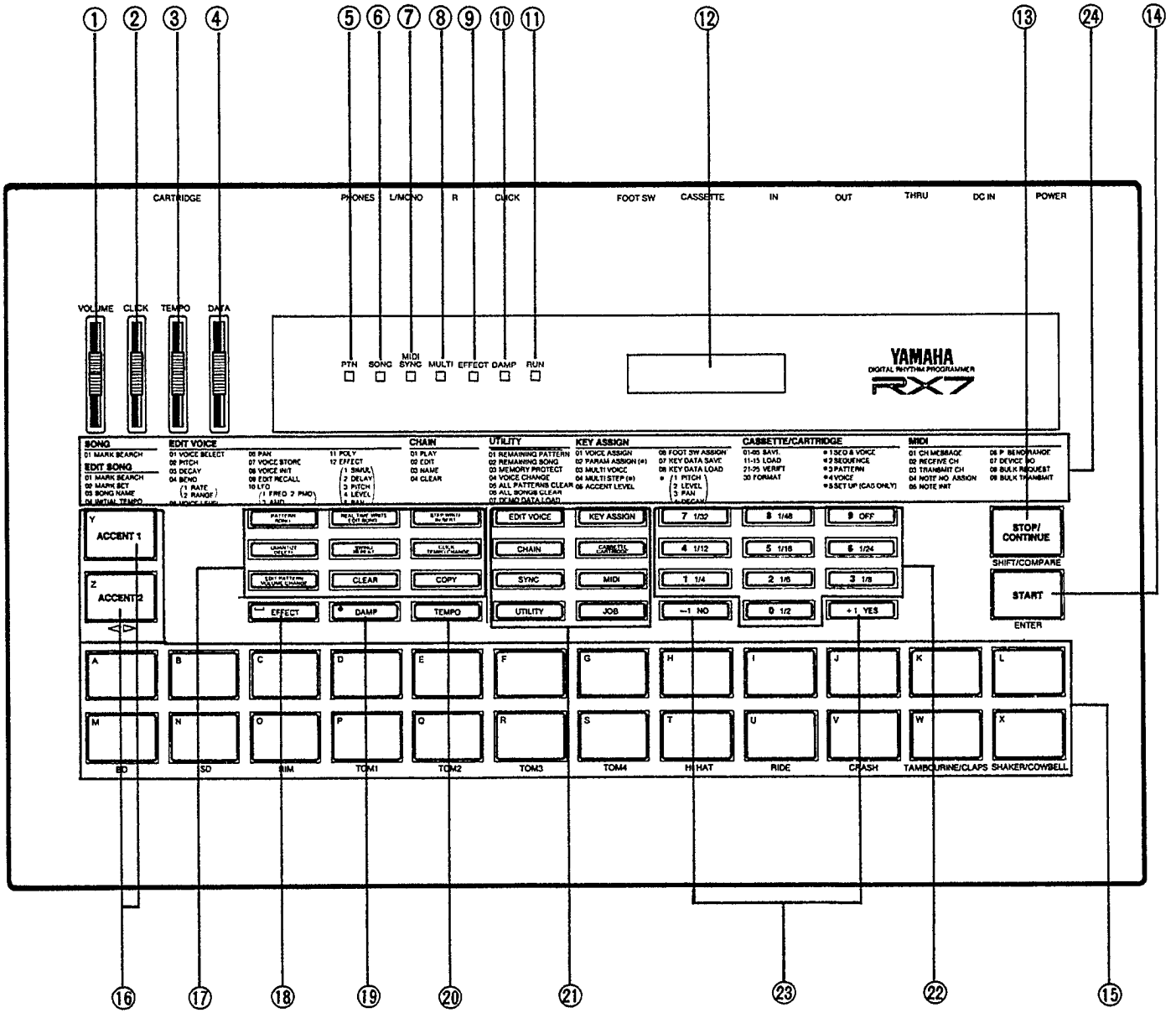
See p.33 for reference.

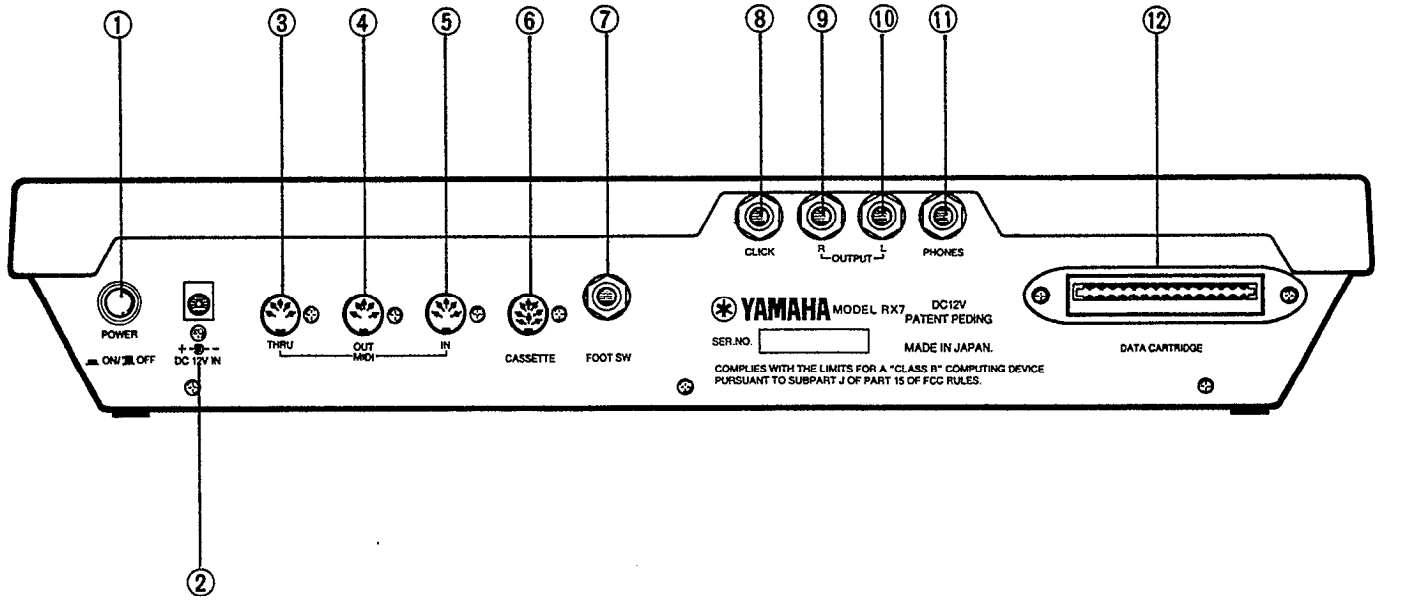
CONTROL PANEL

① VOLUME
② CLICK
③ TEMPO
④ DATA
⑤ PTN
⑥ SONG
⑦ MIDI SYNC
⑧ MULTI
⑨ EFFECT
⑩ DAMP
⑪ RUN
⑫ LCD
⑬ STOP/CONTINUE
⑭ START
⑮ Instrument keys
⑯ ACCENT 1, 2
⑰ Pattern/Song keys
⑱ EFFECT
⑲ DAMP
⑳ TEMPO
㉑ Mode/Job keys
㉒ Numeric key pad
㉓ -1 NO / +1 YES keys
㉔ Job Menu

REAR PANEL

① POWER ON/OFF
② DC 12V IN
③ MIDI THRU
④ MIDI OUT
⑤ MIDI IN
⑥ CASSETTE
⑦ FOOT SW
⑧ CLICK
⑨ OUTPUT R
⑩ OUTPUT L
⑪ PHONES
⑫ DATA CARTRIDGE


CARTRIDGE
PHONES
L/MONO
R
CLICK
FOOT SW
CASSETTE
IN
OUT
THRU
DC IN
POWER
VOLUME
CLICK
TEMPO
DATA
PTN
SONG
MIDI SYNC
MULTI
EFFECT
DAMP
RUN
YAMAHA
DIGITAL RHYTHM PROGRAMMER
RX7
SONG
EDIT VOICE
CHAIN
UTILITY
KEY ASSIGN
CASSETTE/CARTRIDGE
MIDI
ACCENT 1
ACCENT 2
CLEAR
COPY
EFFECT
DAMP
TEMPO
EDIT VOICE
KEY ASSIGN
CHAIN
SYNC
MIDI
UTILITY
JOB
STOP/ CONTINUE
SHIFT/COMPARE
START
ENTER
BD
SD
RIM
TOM1
TOM2
TOM3
TOM4
HI HAT
RIDE
CRASH
TAMBOURINE/CLAPS
SHAKER/COWBELL


POWER
ON/ OFF
DC 12V IN
THRU
OUT
MIDI
IN
CASSETTE
FOOT SW
CLICK
R
OUTPUT
L
PHONES
YAMAHA MODEL RX7 DC12V
PATENT PEDING
SER.NO.
MADE IN JAPAN.
COMPLIES WITH THE LIMITS FOR A "CLASS B" COMPUTING DEVICE
PURSUANT TO SUBPART J OF PART 15 OF FCC RULES.
DATA CARTRIDGE

FCC INFORMATION

While the following statements are provided to comply with FCC Regulations in the United States, the corrective measures listed below are applicable worldwide.

This series of Yamaha professional music equipment uses frequencies that appear in the radio frequency range and if installed in the immediate proximity of some types of audio or video devices (within three meters), interference may occur. This series of Yamaha combo equipment have been type tested and found to comply with the specifications set for a class B computing device in accordance with those specifications listed in subpart J of part 15 of the FCC rules. These rules are designed to provide a reasonable measure of protection against such interference. However, this does not guarantee that interference will not occur. If your professional music equipment should be suspected of causing interference with other electronic devices, verification can be made by turning your combo equipment off and on. If the interference continues when your equipment is off, the equipment is not the source of interference. If your equipment does appear to be the source of the interference, you should try to correct the situation by using one or more of the following measures:

Relocate either the equipment or the electronic device that is being affected by the interference. Utilize power outlets for the professional music equipment and the device being affected that are on different branch (circuit breaker or fuse) circuits, or install AC line filters.

In the case of radio or TV interference, relocate the antenna or, if the antenna lead-in is 300 ohm ribbon lead, change the lead-in the co-axial type cable.
If these corrective measures do not produce satisfactory results, please contact your authorized Yamaha professional products dealer for suggestions and/or corrective measures.
If you cannot locate a franchised Yamaha professional products dealer in your general area contact the professional products Service Department, Yamaha Music Corporation, 6600 Orangethorpe Ave., Buena Park, CA 90620, U.S.A.

If for any reason, you should need additional information relating to radio or TV interference, you may find a booklet prepared by the Federal Communications Commission helpful:
“How to Identify and Resolve Radio -- TV Interference Problems”. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402 -- Stock No. 004-000-00345-4.

YAMAHA

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RX7 OM

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11/17/98 98109

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Recycled